

THE
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OF AUSTRALIA**

VOL. II.—11TH YEAR.

SYDNEY: SATURDAY, JULY 26, 1924.

No. 4.

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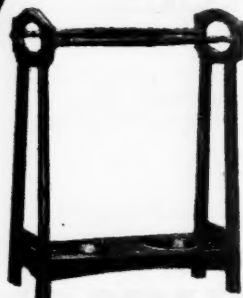
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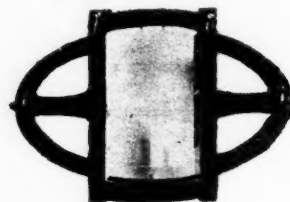


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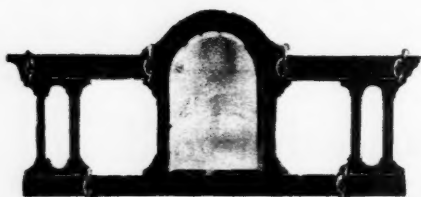
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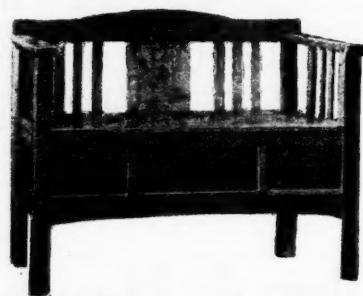
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HEADACHE.¹

By D. M. McWHAE, C.M.G., C.B.E., M.D., B.S. (Melbourne), M.R.C.P. (London),
Honorary Physician, Perth Hospital,
Western Australia.

HEADACHE is one of the most frequent symptoms met with in practice. It is a symptom only and always requires careful investigation as to its cause. The cortex of the brain, so far as we know, is insensitive to pain, but the *dura mater* like the periosteum is well supplied with sensory nerves and is sensitive to pain. Headache is produced by the effect of pressure or inflammation on these nerve endings. The pressure may be direct as in the case of cerebral tumour or abscess or it may be due to hyperæmia caused by the toxæmia of such conditions as uræmia, the acute infective diseases and poisons such as alcohol and lead *et cetera*.

Headaches may be classified as follows:

I. Intra-cranial, including—

- Those due to meningeal disorder or irritation, *exempli gratia* meningitis, syphilitic meningitis, pachy-meningitis;
- Those due to new growth and abscess;
- Those due to hydrocephalus.

II. Extra-cranial, including—

- Those of ocular origin;
- Those of dental origin;
- Those of nasal origin;
- Those of toxæmic origin, arising from—
 - Acute infectious diseases such as influenza, typhoid *et cetera*;
 - Diseases such as uræmia or diabetic coma;
 - Drugs such as alcohol, lead;
- Those of gastro-intestinal origin, *exempli gratia* the headache associated with the empty and hungry stomach which is probably more reflex than toxæmic.

III. Psychogenic and psychotic headaches of neurasthenia, hysteria and manic-depressive psychoses.

IV. Migrainous headaches.

I have examined the records of fifty-four patients seen by me during the first three months of this year in all of whom headache was a prominent symptom. This was caused as follows:

I. Intra-cranial: Tumour, one a secondary, malignant growth and one a case of Paget's disease (*osteitis deformans*) with marked thickening of cranial bones; head injury, one.

II. Extra-cranial: Ocular, one; nasal, one; uræmic with high blood pressure, five; alcohol, two.

¹Read at a meeting of the Western Australian Branch of the British Medical Association on May 21, 1924.

III. Psychogenic and psychotic: Neurasthenic, twenty; manic-depressive, nine; epilepsy, two; *paralysis agitans*, one.

IV. Migrainous, eight.

V. Two patients with *tic douloureux*, who described the pain as headache.

By far the commonest headache was that of functional nervous and depressive conditions. The next most common headache was the migrainous headache. Serious kidney disease accounted for five and serious organic intra-cranial disease accounted only for two. Very few cases were due to frank reflex ocular or dental defects, but this is probably not the experience of the other openers of this discussion. We must, however, always look for such reflex causes.

About a month ago a patient recovering from manic-depressive trouble began to complain of what she called a terrible headache which persisted until the removal three weeks later of several carious teeth, one with a hidden abscess. Yet I believe that it is a fallacy to suppose that the majority of the headaches met with in practice have their origin in some source of reflex irritation. In a great many patients I have seen errors of refraction corrected and nasal, aural and dental treatment given and all without the slightest effect on the headaches. Especially is this the case in psychogenic and psychotic headaches and even in many cases of migraine. I do not wish to minimize the importance of ocular, dental and nasal causes of headache, but it must be remembered that headache can only be described subjectively and that what one person would describe as a dull headache may in the exaggerated description of the neuropath become a terrible agony. There appears to be, however, a real increased sensitiveness of the sensory nerves to pain in many neuropathic patients.

Careful inquiry will generally reveal that the continuous pain in the head frequently complained of by manic-depressive patients is more a heavy dull feeling associated with difficulty in thinking and concentrating rather than an acute pain. There is generally depression or definite melancholia with perhaps periods of excitement or well-being. It is always necessary in such patients to determine whether the depression is so great as to lead to ideas of self-destruction.

Similarly in neurasthenic patients, although terrible pain may be complained of, inquiry frequently reveals that the pain is not acute, but that the head feels heavy, that it is being squeezed or pressed upon as if by a vice or that there is giddiness or dizziness. These patients are frequently so oversensitive that they complain bitterly of the normal pulsation of the blood vessels of the head. Introspection and apprehension frequently cause the patient to give with a wealth of detail most elaborate and careful descriptions of such symptoms as these. Always the headache is worse after emotion or fatigue and particularly after any effort requiring much concentration. Perhaps few people go through life without some headache and it is either

ignored or made much of, according to the nervous and mental make-up of the individual. The treatment of these headaches, as in the case of all symptoms, is the treatment of the cause of the symptom combined with the use of suitable sedatives.

The headache of a well-marked migraine attack is familiar to all. First come the peculiar eye sensations, then a blurring of vision which expands and is accompanied by peculiar zig-zag scotomata, then a unilateral headache which increases in intensity, then finally nausea and vomiting followed by a complete disappearance of all symptoms, the whole attack lasting from a few hours up to one or two days. Such attacks may occur at regular though greatly varying intervals, but are frequently replaced by abortive or variant types. Thus chilliness, partial scotomata and depression may occur, but the expected attack fails to put in an appearance. Or variants may occur such as severe hemi-crania without nausea and vomiting or there may be great variation in the character of the scotomatous attacks. All are characterized by periodicity in their occurrence. Migraine is probably a vaso-motor phenomenon, the initial stage of vaso-constriction with pallor, dizziness, temporal vessel constriction being followed by vaso-dilatation with headache, possibly produced by the increased intra-cerebral pressure caused by the dilatation of the cerebral arteries. This has been considered to be the result of an excitation followed by a paralysis of the sympathetic nerves and two forms of migraine have been described, a *hemicrania sympathetico-tonica* and a *hemicrania sympathetico-paralytica*. Dr. Fisher, of the Royal London Ophthalmic Hospital, considers that a periodic temporary swelling of the pituitary gland with functional activity of this gland best explains the migraine attack, while Dr. Tierney, of St. John's Hospital, United States of America, noticing that a definite Chvostek sign occurs in some cases of migraine, suggests that it is associated with parathyreoid disturbance and calcium deficiency.

Innumerable therapeutic efforts have been made to remove migraine. Refractive errors have been corrected, sometimes with considerable benefit, often with no result at all. Sinuses have been drained, different diets and innumerable drugs have been tried, but frequently the migraine persists entirely unaffected by treatment. Recently calcium glycerophosphate in doses of 0.6 gramme (ten grains) three times a day has been given and good results have been claimed.

Attempts have been made to separate pituitary headaches from true migraine. True migraine is distinctly paroxysmal and is associated with visual disturbance and with nausea and vomiting, while pituitary headaches are bilateral, not paroxysmal, and with different ocular symptoms and usually without nausea or vomiting. Such headaches have been treated with anterior lobe pituitary substance and good results are stated to have occurred.

With regard to toxæmic headaches, the commonest in my experience are those due to chronic

kidney disease. There is generally a high blood pressure and definite albuminuria and frequently there is also albuminuric retinitis. Other uræmic symptoms are common and the headaches are of very grave import. I should like in this connexion to draw attention to the fact that patients with very high blood pressures, for example with a systolic blood pressure of 240 and a diastolic pressure of 140 or higher, frequently carry on for considerable periods and may be completely free of headaches. In these patients the albuminuria is generally slight. I have watched several of these patients during the past few years. Some are still well, others have had a stroke, but headaches have been entirely absent.

Intracranial headaches include the headaches of cerebral tumour which are associated frequently with vomiting and optic neuritis and other signs of lesions of the brain tissue. Also it includes the headaches of cerebral syphilis and hydrocephalus. These headaches it is not my intention to describe.

Finally it is necessary to remember that although neuralgia of the nerves of the head and neck is not a true headache, yet it is frequently described as such by patients. Especially is this the case with occipital neuralgia and even *tic douloureux*.

HEADACHES.¹

By H. J. GRAY, M.B., B.S. (Melbourne),
Perth, Western Australia.

THERE is surely no doubt that, as Sluder says, "headache, whether it be seldom or frequently recurrent, must be a symptom of a lesion of some kind, whether a pathological-histological change or a toxæmia be at present recognized as its cause."

In my own practice I do not feel quite so frequently humiliated now as formerly, when, to make my ignorance less oppressive, I would put down on my history cards a diagnosis of "cephalalgia." I had quite a series.

As this paper is one of three tonight, I must necessarily not attempt to be exhaustive. The paper certainly will not be so as regards nose, throat and ear conditions. It may be to your patience.

Teeth.

I shall begin with the teeth. I generally look at the teeth first. Many adults are like children and do not mind having their teeth examined to begin with, but strenuously object to a nasal speculum or tongue depressor.

Apical Abscess.

Miss M., *atatis* nineteen years, came with a story of having suffered for years from severe headaches coming on at any time. She had consulted more than one oculist; she was treated medically for many months—mainly along "intestinal" lines—by more than one physician; she was examined under anæsthesia by a gynaecologist and

continued every little while to be so incapacitated that she had to stay in bed for a day or two till the headache eased off.

I believe she consulted all these practitioners when she was fit enough to go to their surgeries. She finally called in Dr. Moore during an attack and he, observing that her nose was red, sent her to me for investigation.

Now the history was clear that in every attack her nose got red. There was not the slightest redness when she saw me and one can readily understand, therefore, that this "king-pin" of the story had not previously been valued at its worth.

Another important fact was that the headache was confined practically to the left side of the head, namely in the frontal region.

Examination showed that the tonsils were septic and the nasal septum deviated to the left. Headache from the tonsils would not be so one-sided, that from blocked sinuses by the septum might be, but neither would account for the red nose.

The teeth and gums looked perfectly quiet, but there was a pivot on the left upper lateral tooth, of which I was immediately suspicious on principle. A skiagram by Dr. Smith showed that the pivoted tooth was all right, but that there was an apical abscess of the central tooth tracking up to the floor of the nose. The dentist drilled out his filling and reported that there was a distinctly unpleasant odour from the probe passed up the canal. The patient was very unwilling to sacrifice the good-looking central tooth, but attempts at filling immediately resulted in trouble. She went comfortably without any filling for some months, but finally had the tooth extracted. This was in 1922. She has remained quite free from headaches since and complains that she has got too fat.

Incidentally, I believe when chronic osteitis of this nature is present, whether it be around the apex of the tooth or at the alveolar margin, conservative treatment is inevitably doomed to failure.

A somewhat similar case has its lessons.

Mr. C., *atatis* thirty-four years, in addition to much the same sort of headache, complained that he periodically got a slight discharge in his nose which was quite offensive. A skiagram showed comparative dullness of his left antrum and all the other sinuses were clear. I washed out the antrum several times, but never caught anything.

I did not discover the condition for several months. He could only stay in Perth a couple of days at a time; sometimes he would catch a cold coming from the country to the city and, of course, like toothache and a visit to the dentist, there was never any bad smell the day he saw me. Further, he had apparently no possible source of tooth trouble, because he had had most of his teeth extracted some thirteen years before and what remained were beyond suspicion. Finally, I was more or less obsessed by that shadow in the skiagram. At last after some months he came in and I said: "Sit down and I'll have a go at you as if I had never seen you before." I then discovered that in the region of the left upper canine, there was distinct thickening, possibly present all the time, but probably increased at this stage. There was no opportunity for having a dental skiagram taken, so I sent him to the dentist who forthwith extracted a relic of the canine root. He thought he had got into the antrum on account of the huge cavity. A probe passed right to the floor of the nose and an outlet here gave the recurrent bad smell and discharge and was the reason that there was no redness or swelling of the nose or lip.

Crowns.

Mrs. V., *atatis* forty-three years, was sent to me in January, 1922. Her headaches were very severe in the temporal and occipital regions. "They come on when I go anywhere or do anything."

Examination of her mouth revealed a galaxy of crowns and fillings. A skiagram by Dr. Smith of these showed

¹ Read at a meeting of the Western Australian Branch of the British Medical Association on May 21, 1924.

numerous apical abscesses. She had practically a full complement of teeth and there were only two decent ones in the lot. There was no obvious pyorrhœa or gingivitis, though at times her breath was nasty in the mornings. The teeth were all extracted and the odour from them was extremely foul.

She improved right away, but after some months the headaches recurred slightly to her great alarm. I then enucleated her septic tonsils. These I had condemned at the first interview. She has been quite well since, feels very fit and has put on much weight.

Here I want to make a most emphatic statement. Every crown going below the gum is a source of sepsis.

Impacted Teeth and Hindered Eruption.

Miss G., *etatis* twenty years, complained of pain all over the right side of the head and in her right ear. (I am making no distinction between pain and headache.) Examination revealed nothing abnormal enough to count, except that the wisdom teeth had not erupted. A skiagram showed the right wisdom lying hard against the second molar. This latter was extracted and showed quite an excavation on the side of the root—absorption from pressure of the erupting wisdom. The pain ceased and the wisdom erupted in due course.

Pyorrhœa Alveolaris.

We are all on the look-out now for pyorrhœa as a cause of headache—as a cause of anything for that matter. It is hardly necessary to quote any cases. The biggest worry, I think, is in the interpretation of skiagrams, especially as an aid to treatment, whether the teeth can be saved or have to be extracted.

Tonsils.

A potent source of headache—occipital, frontal, nuchal, vertical, general or indefinite—is chronic sepsis of the faucial tonsils. Occasionally is seen chronic sepsis of the naso-pharyngeal tonsil. Recurrent acute adenoiditis is, of course, very frequent.

Miss F., *etatis* twenty-two years, complained of very severe periodical headaches, occipital and frontal. Her eyes had been tested and found all right. A further important symptom, suggesting right away a septic focus, was pain in the limbs and back. The tonsils were buried, hidden between the faucial pillars. "Milking" the tonsils expressed numerous concretions. I enucleated the tonsils twelve months ago and she has remained free from all her pains.

I would emphasize here that mere inspection of the fauces may not reveal anything abnormal. Pressure with a blunt probe or the fore-finger may squeeze out much unsuspected pus. Frequently, too, these patients never complain of any soreness of the throat, just as they so often are unaware of any pyorrhœa and are mystified that they have not had toothache.

Nose.

Sinusitis.

Patients suffering from headaches with obvious nasal symptoms sooner or later get nasal investigation, so it is only useful to mention a few cases. After influenza particularly headaches from sinusitis are very common. You have all probably experienced the severe headache, especially on stooping, in the frontal regions and right in the eyes during an acute cold. Frequently one sinus or more does not immediately clear up.

Antrum.

The pain from antral sinusitis is most frequently complained of in the frontal region.

Mr. L., *etatis* twenty-four years, was confined to bed suffering from influenza for a couple of days some two weeks before seeing me. His temperature subsided and he got well enough to move around, but the pain at the back of the eye and right frontal region continued to be severe. On account of the pain in the eye he went to the oculist who found no appreciable error of refraction and referred him to me. Examination showed pus in the right middle meatus. Lavage of the antrum cleared out a lot of greenish pus and his headache was very much eased. All pain speedily ceased on further treatment by lavage, though it took many washes before the inflammation of the antral mucosa subsided.

Chronic Sinusitis.

Patients complaining of headache and of excessive naso-pharyngeal catarrh usually have chronic inflammation of one or more sinuses. Most nasal headaches, too, are bad in the early morning. The patient goes to bed all right and wakens with a bad headache. Such headaches are much more usually due to nasal trouble than to eye strain. The eyes have been resting during the night, while the nasal mucosa has become more congested with the recumbent posture.

Mr. H., *etatis* forty-two years, complained for many months of severe frontal headache especially on the right side. It was extremely severe in the early morning. His trouble dated from the extraction of some upper teeth some six months before. He had lost no less than nineteen kilograms (three stone) in weight.

A skiagram showed opacity of both antra and the right frontal sinus. Pus was present in the right middle meatus and might have been coming from the frontal sinus or antrum or both.

I inserted the wash-out needle into the antrum and on blowing air through with the syringe there was a gush of foul pus through the blocked antral ostium and the patient exclaimed: "My headache's gone!" Radical operation on the antrum completely cleared up all signs and discomfort. The frontal sinus was not interfered with. He regained his full weight in a couple of months.

N.J., *etatis* thirteen years, was brought to me a few weeks ago with the story that frontal headaches were so severe that he was frequently sent home from school and every drill day he was very bad. This might easily put one off the track instead of on to it. A skiagram showed both antra opaque and I washed out a lot of muco-pus. The mother said: "You know"—I did not and I am glad she pointed it out to me—"at drill there is such a lot of stooping and that always seems to make him worse." Like the early morning headache from lying down all right, the stooping caused congestion and blocking of the sinuses and that means pain.

This boy had had his tonsils and adenoids operated on when aged seven years and his adenoids again some twelve months ago on account of rhinorrhœa which was doubtless due all the time to the chronic sinusitis.

Ethmoid and Sphenoid.

The patient with ethmoidal sinusitis frequently complains of pain across the bridge of the nose in addition to frontal, ocular and general headache. He frequently complains that he feels that something is gripping his nose in the lachrymal region.

Sphenoidal sinusitis, both suppurative and non-suppurative, may cause very severe headaches—occipital, parietal, ocular and aural. A suggestive type of pain is that in which the patient feels as if a skewer were being driven through the head.

Mrs. B., *atatis* forty years, complained of pain all over the left side of the head and most particularly in the left ear. Pus was observed tracking down the nasopharynx on the left side and there was a lot of granulation tissue which was very like a naso-pharyngeal endothelioma. On removal of the left middle turbinate pus flowed freely from the sphenoid. Drainage by enlarging the sphenoid opening completely cleared up everything.

Frontal Sinuses.

There is a very common nasal headache that is very frequently missed. This is the "vacuum frontal sinus headache" so named by Sluder.

This may be unassociated with any nasal symptoms. There may be no excessive secretion and no difficulty of breathing through either nostril. Sluder points out that if the outlet of the frontal sinus gets blocked, absorption of air from the sinus takes place—hence his label of vacuum frontal sinus—and the resulting swelling of the mucosa produces headache.

Further, this headache may not come on early in the morning, but after a few hours' use of the eyes. It is this type of headache that is so often ascribed to some error of refraction which can usually be found. Sluder has drawn attention to what is called "Ewing's sign," which is tenderness at the region of the attachment of the pulley of the superior oblique muscle. The use of the eyes for near work causes a pull of this muscle on the floor of the vacuum frontal sinus and headache results.

Mr. V., *atatis* thirty-three years, had devastating headaches on rising. Frequently he was so bad that he was a couple of hours late for work. He could not read the paper, it made the pain worse and this was right over the frontal sinuses of both sides.

His forehead had been blistered by his medical attendant and he had taken all sorts of pain killers. He could breathe freely through both sides of the nose, he was not subject to colds, he had no excessive catarrh. Ewing's sign was well marked. The *septum nasi* in the region of the middle turbinates showed obstructive thickening of spindle-shaped character.

Submucous resection of the septum several years ago completely cured his headaches. He put on much weight and has remained very fit. I saw him a couple of weeks ago.

A case like this is a gift. So frequently we have to deal with the indefinite case. You all know the type of patient like the weather prophet who prognosticated that the wind would be south, turning to the north, veering round to the west with a slight easterly direction. After ten minutes' interrogation you cannot put a definite statement on the history sheet. The oculist finds a small error of refraction, I find some slight nasal obstruction only. The physician has not done any good. If they see me first I send them to the oculist and let him have a go at them before I resort to surgery to free the sinus outlets. It is largely a matter of trial and error.

Ear.

It is hardly within my province in this paper to discuss in any differential way ear troubles causing headache—troubles of the pinna, external canal, Eustachian tube, mastoid and right through to the meninges and brain. It is worth emphasizing, however, that chronic headache associated with a

chronic otorrhoea or history of ear trouble, even when unaccompanied by definite ear pain or other local symptoms, calls for detailed ear examination. Intra-cranial complications may be threatened or may be already established and crying out for immediate interference.

Other Conditions.

I will just mention a few conditions which need to be borne in mind.

Atrophic rhinitis—"the opprobrium of rhinology"—causes headaches and dopiness through scabs blocking the sinuses.

Neuralgia of Meckel's ganglion and the Gasserian ganglion generally have their localizing manifestations. Sinus pain may be referred to any division of the trigeminal nerve. Patients with parotitis, salivary calculus, *pediculosis capitis* and nasopharyngeal neoplasms have all come along seeking relief from headaches or local pain.

Summary.

I want to lay stress again on those conditions that are not very obvious and, though common, are readily enough overlooked:

- (i.) Apical dental sepsis;
- (ii.) Chronic low grade sinusitis;
- (iii.) Vacuum frontal sinus;
- (iv.) Chronically septic small tonsils;
- (v.) Chronic otitis media.

Conclusion.

In conclusion, if I have quoted those cases in which I have had success, remember, like the man who dealt himself four aces, it has been my deal and now you can have yours.

CHARACTERISTICS OF HEADACHES.¹

By D. D. PATON, M.A., M.B. (Edin.),
D.O. (Oxon.).

Honorary Ophthalmic Surgeon, Perth Public Hospital,
Honorary Ophthalmic Surgeon, The Children's
Hospital, Perth, Western Australia.

IN contributing as an ophthalmologist to this evening's discussion, paradoxical as it may appear, I commence by stating as a preface to my remarks the following conclusion, that whereas on the one hand the recurrent onset of pain immediately in association with eye work makes it evident to the least initiated that the coincidence is strong enough to suggest the relationship of cause and effect, yet on the other the determination of the eyes as the origin of the trouble may only be made possible by a process of exclusion and a consideration of the results of treatment.

I propose to speak shortly on the characteristics of eye headaches, keeping in view that the family practitioner wishes to be able to judge of the probability of the eyes being the source of the trouble

¹ Read at a meeting of the Western Australian Branch of the British Medical Association on May 21, 1924.

from a consideration of the patient's complaint of headache, as I understand that is the position the Honorary Secretary wishes us to take up tonight.

Organic Diseases of the Eye.

Of the organic diseases of the eye I will say but little as when those that cause headache are present, the clinical appearances usually are sufficiently apparent to attract attention. I will only give you, therefore, four examples to remind you that although the eyes may appear normal, yet they may be seriously affected. Intermittent frontal headaches more particularly in the elderly may be the only symptom, beyond transient mistiness of the vision and the appearance of haloes, of a quiet chronic glaucoma. Once this possibility is remembered, an estimation of tension can always be attempted, but it may not be so easy to express what is felt in these cases in terms of super- and sub-normal pressure. Pain or heaviness about the eyes which continue to appear normal externally, may also be a herald of neuritis, retrobulbar or entire. This may or may not be accompanied by sinus trouble, but with it the onset of falling visual acuteness provides a safe-guard against prolonged over sight. The last reference to be made in this connexion is to the possibility of an organic eye affection arising in the course of or simulating a general complaint where the headache has been ascribed *in toto* to the general disease diagnosed. As an example of the latter, I have known a patient whose headache and vomiting were attributed solely to influenza and only lately, when the abatement of the symptoms left serious deterioration of vision revealed, was it discovered that either the real complaint was a glaucoma or that it had supervened after the first diagnosis had been made. As an example of the former, an illness ushered in by headache and vomiting, when a definite diagnosis is difficult, may cause surprise later on by blurring of vision from a papilloedema secondary to increased intracranial pressure. We cannot anticipate all such possibilities in whose very infrequency lies the danger, since there is nothing in the nature of the headache to raise our suspicion. The examination of the fundus, however, is becoming technically easier with the use of the electric ophthalmoscope and it is a little risky in any illness to attribute blurring of vision to a general weakness without some examination of the eyes.

Functional Disorders.

To pass to the more frequent functional disorders, optical and muscular, that cause headaches. The actual cause does not at first interest the general practitioner so much as a broad diagnosis that the eyes are at fault.

The word headache describes very different sensations in different people. When due to the eyes there is more of what I might call a two-dimensional ache or feeling of tension that may grade from a vague uneasiness up to a prostrating oppression rather than the pulsating or expanding headache met with in some other troubles. But the word may be used otherwise to indicate neuralgic or neuritic pains that may be located over the peri-orbital

or zygomatico-temporal nerves. Of these the infra-orbital is less frequently implicated, but on the other hand even the auricular and occipital nerves are not exempt.

In the consideration of a headache it is necessary to consider: (i.) Localization, (ii.) time of appearance, (iii.) exciting cause, (iv.) accompanying symptoms.

Localization.

The neuralgic pain naturally follows lines of anatomical structure and so far completely resembles other neuralgias in character. I can recall one case among many less serious of severe temporal pain that recurred with lancinating severity for years and was only relieved ultimately by correction of a unilateral astigmatism. The relief of supra-orbital neuralgia whether of long standing or acute is not uncommon and therefore when considering sources of irritation in the first division or even the second of the fifth nerve, the eye must not be forgotten. The headaches more properly so called are not so definitely delimited and may be described as retro-ocular, retro-nasal, low or high frontal, temporal, occipital and occipito-cervical. Primary vertex or isolated retro-auricular headaches are comparatively uncommon, but may appear secondarily, for as the pain increases and continues, it tends to pass from one area to another, for example from the forehead to the occiput or *vice versa*, from the occiput to the cervical and even to the upper dorsal area. I am not claiming more than that in these cases the asthenopia may be one of the causes of the pain in these positions, as proved by the relief of the pain after treatment of the eye conditions. When the headache or discomfort is described as retro-nasal or placed over the frontal sinuses, the question of nasal abnormality *et cetera* being the true cause or an accessory one naturally arises and if investigation of the history leads to the supposition that both errors of refraction and nasal factors are present, it becomes very difficult to determine how much of the headache is due to one or other without the fullest consideration of the accompanying symptoms and even then the cause may not be cleared up until treatment to one or other is instituted. I think the rhinologist will agree that an initial refraction correction is from the point of view of the patient's time at least frequently the more economical course. Even in cases of sinusitis the pain may closely resemble that originating in an eye, but here a physical examination indicates as a rule the more urgent treatment. Why the pain from the same cause should be felt in different people in different areas, the type remaining astonishingly constant over a term of years, is not yet solved, but its position in some cases seems to be due to an increase to a greater or smaller extent in tonicity of the occipito-frontal aponeurosis. In others it bears the closer resemblance to the segmental areas of referred pain described by Head for the trunk in diseases of the viscera.

Time of Appearance.

It may be thought that the time of appearance would prove a ready indication as to whether head-

aches were due to eye strain, but although many eye headaches only appear when eye work is being done and vary in severity according to its amount and the depreciation of the general sources of energy, all are not so manifestly associated. For example the headache may be the sequel of a day's outing or of a train journey or appear only later in the early hours of the morning, waking up the patient from sleep, or be noticeable on his getting up to resume the day's work. This type of headache which may pass off as he regains his energy after a meal, characterizes many uncorrected presbyopes. Again in many women they may appear at the menstrual periods at first and only after the strain increases be felt at irregular times in the intermenstrual intervals.

Exciting Causes.

The patients will frequently ascribe their trouble to the concentrated eye work, but on the other hand many come for examination only after all other suggested causes and treatment have proved ineffective, possibly it may be over a period of months or years, direct noticeable eye symptoms being non-existent. We still come across people who have been sympathized with as the inheritors of a family headache, well established through one or two generations, whose real misfortune is to have had handed down to them a dominant type of refraction with a characteristic family reaction to nervous strain. In some business men and women they may be put down to general fatigue and over work and here we strike a vicious circle for general fatigue exaggerates eye fatigue and eye fatigue cerebral exhaustion. The patients themselves may hold a dyspepsia blameworthy, viewing it erroneously as cause instead of as a consequence. So here again we may get no direct help from the patient in narrowing down the possible true cause of his trouble.

Accompanying Symptoms.

An eye headache may appear unaccompanied by any other symptoms, but it may be associated with other disturbances, such as giddiness due to a variation of the focussing and nausea which may increase until it ends in vomiting, one type of the so-called bilious headache. This sick headache may closely resemble a true megrim attack in that scotomata may be a feature of importance and its distribution unilateral. As a contrast the pain itself may be slight and the gastric symptoms more arresting. One case in particular I remember where a man employed in clerical work found that after his correction he could digest pastry, although for years previously he had been unable to do so. Other unexpected reflexes may appear and I have had a patient whose chief complaint was not the headache but a palpitation on attempting near work. We may feel a little sceptical as to the result of the correction in such cases, but the subsequent history left no room for doubt. Such cases add the eyes to the list of the possible causes of many reflex disturbances. It is not necessary to dilate on localized eye phenomena here. In children with vague headaches there may be a mental dulness and failure to thrive according to expectations and they

frequently develop choreic-like twitchings that may spread to the shoulder girdle.

Conclusion.

So you see I am bound to conclude by reminding you of my preface. So protean are the effects of headache that the longer we practise, the less confidence we have in excluding eye trouble from the list of possible original or contributing causes until an examination has actually been made. If other pathological conditions are also present, an oculist can only indicate to the medical attendant the probable degree of trouble arising from the eyes and its amount. This involves an estimation of the patient's general nervous stability and reserve as the pains and headaches bear no relation to the amount of error or muscular imbalance whatsoever. Indeed I believe no more valuable test of general nervous efficiency and the capacity to stand the wear and tear of life exists than the reaction of the individual to errors of refraction.

In concluding my remarks, I will ask you to remember that although abnormalities may have been discovered that can cause headaches in some people, it does not follow that in any particular case it is the main or the only cause and that search need not be made for any other cause.

Take for example the headaches in anæmic girls, in business men approaching presbyopic age with a blood pressure just above the normal or in women during lactation or in patients during convalescence after operation a refraction correction may clear up the whole trouble or it may not help at all and only a complete review of all the circumstances with the details placed in their proper perspective will permit of that sound judgement, which alone diminishes the risk of both oculist and non-oculist alike falling into errors. Unfortunately discovery of one lesion seems many a time to inhibit the search for others.

ON THE TREATMENT OF DIABETES.¹

By A. W. HOLMES & COURT, M.D. (Sydney),
M.R.C.P. (Lond.).

Honorary Physician, Sydney Hospital.

I HAVE first to express my appreciation of the honour conferred upon me by the invitation of the North-Eastern Medical Association to address this meeting.

The advances recently made in the treatment of *diabetes mellitus* are of such interest and importance that a brief discourse on this subject seemed not inappropriate to present to you. As medical practitioners we are all called upon to treat patients suffering from this disease. Those placed so fortunately as to have laboratory facilities at their disposal are thereby the more keenly appreciative of the difficulties of men in general practice to whom such assistance is often unavailable.

¹ Read at a meeting of the North-Eastern Medical Association, Kempsey, New South Wales, on July 9, 1924.

Before discussing the effect upon treatment which the introduction of "Insulin" has produced, it may be profitable briefly to review some of the work which had been done by Allen, Joslin and others prior to Banting's epoch-making discovery. It is proposed, however, to confine this address to the practical aspect of the question, dealing solely with the everyday problems which are encountered in the handling of diabetics in hospital and private practice.

It is hardly necessary to remind you that a few short years ago all that we were taught to do was to instruct the patient to minimize the carbohydrate in his dietary and to indulge in practically unlimited protein and fats!

Allen's Experiments.

Then the classical experiments of Allen showed that in dogs deprived of a large portion of the pancreas over-feeding induced glycosuria and rapid death, whereas similar animals on a much restricted diet could be kept alive and healthy for a long period.

From these observations there evolved the principle of treatment by under-nutrition.

Although the condition of the human diabetic is not entirely analogous to that of a partially depancreatized animal, the diminished power of carbohydrate metabolism is the essential corresponding feature in both cases.

Treatment by Under-Nutrition.

Following the method of Allen it became customary to attempt:

- (i.) To render the patient's urine sugar-free by starvation;
- (ii.) To estimate the degree of carbohydrate tolerance by gradual increase of diet, careful control having been exercised over the amounts of protein, carbohydrate and fat ingested;
- (iii.) To effect an improvement in the patient's powers of assimilation by "alimentary rest";
- (iv.) To formulate a dietary which, while providing sufficient nutriment for the needs of the body, would enable the patient to remain free from sugar in the urine and safe from ketosis.

Although this method represented a great advance in the management of diabetes, there remained a considerable proportion of cases in which carbohydrate tolerance was so low that satisfactory health could not be maintained.

Diet Tables.

Further studies of metabolism have led to a better understanding of the relationship which should be maintained between the different constituents of the diet in order to insure the complete oxidation of the fats.

Diet tables have been constructed by which the appropriate balance between the antiketogenic (glucose) and ketogenic (fatty acid) substances may be maintained.

Working on the basis that one gramme of carbohydrate will insure the complete oxidation of at least 1.66 grammes of fat, the relation between the antiketogenic and ketogenic factors is usually placed roughly as 1 to 1.66 or as 1 to 2. This is the plan devised to prevent the formation of ketone bodies, acetone and diacetic acid. The actual "glucose value" of a diet is calculated from the formula:

G. (glucose value) = C. (carbo-hydrate) + 0.58 P. (protein) + 0.1 F. (fat). This is so because a certain proportion of protein and fat when metabolized yields glucose.

Similarly in reckoning the ketogenic factor in addition to the fats themselves 0.46 of the weight of protein is regarded as contributing to the total fatty acids.

Investigation of Glycosuria.

Let us now pass to the actual investigation and treatment of a patient who has been found to be the subject of glycosuria. It is first to be remembered that glycosuria is a symptom not a disease.

Glycosuria (apart from the disease *diabetes mellitus*) may be found in association with: (i.) Lesions of central nervous system, (ii.) endocrine glandular disturbance—acromegaly, hyperthyroidism, (iii.) emotional disturbance—students after the stress of examination, (iv.) excessive use of alcohol, (v.) septic infection—carbuncles, (vi.) drugs—phloridzin, thyroid substance, (vii.) renal glycosuria *et cetera*.

These conditions must first be excluded before the conclusion is reached that the condition is a definite instance of *diabetes mellitus*. In many cases, particularly those of advanced diabetes, the concomitant symptoms make this conclusion possible without the assistance of elaborate bio-chemical investigations. The rare group of cases classed as renal glycosuria can be definitely recognized only by blood sugar estimations.

Blood Sugar.

In a normal person after fasting overnight the blood sugar is approximately 0.1% to 0.12%.

After the ingestion of fifty grammes of glucose the blood sugar rises abruptly to perhaps 0.16% to 0.17%, subsiding in one to one and a half hours to normal level.

In a diabetic the conditions are otherwise. After the ingestion of glucose the blood sugar percentage rises rapidly to a higher figure, *exempli gratia* 0.25% or more, and it does not return to normal in a corresponding time.

From this has evolved the glucose tolerance test of Maclean (see Charts I. and II.).

In a normal human being sugar does not pass into the urine until the blood sugar percentage reaches 0.18. In renal glycosuria this "threshold value" for sugar is lowered, so that sugar passes into the urine when the blood sugar is at a lower percentage, *exempli gratia* 0.14%.

Let it be supposed that from clinical observation (confirmed if possible by blood sugar investigation) the condition is diagnosed as *diabetes mellitus*.

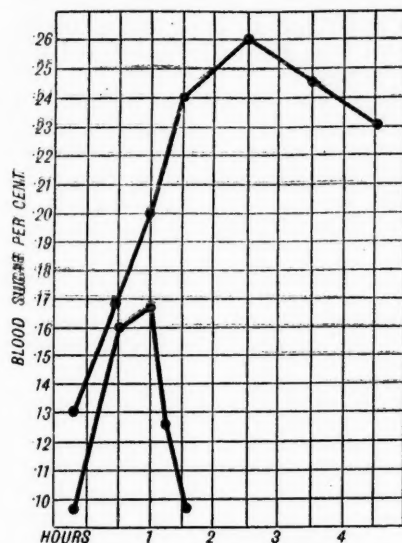


CHART I.—After Maclean.
Upper curve = Blood sugar in diabetes.
Lower curve = Blood sugar in normal subject.

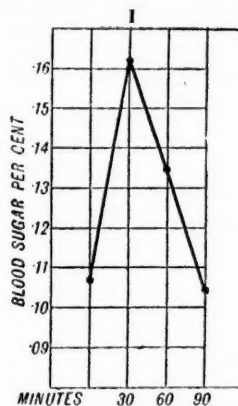


CHART II.—Curve of Renal Glycosuria (after Maclean).

The difficulty is then to provide a suitable diet which will supply sufficient calories to keep the patient in health and if possible at work, without glycosuria and safe from ketosis. The caloric requirement may be estimated approximately by several methods.

Calculation of Dietetic Requirement.

(a) It has been shown that for each kilogram (2.2 pounds) of body weight twenty-five to thirty calories are required every twenty-four hours to supply the demands of the body. If physical work is to be performed, the need will be greater. Thus a patient weighing sixty kilograms would require roughly eighteen hundred calories daily to maintain weight and strength.

(b) The calories required may be calculated more accurately from tables based on measurement of surface area in relation to height and weight (Du Bois).

The total number of calories being determined, the amounts of protein, carbo-hydrate and fat can approximately be estimated.

In an adult man the protein requirement has been estimated at from one-third to one gramme per kilogram of body weight. Allowing one gramme per kilogram, the patient of sixty kilograms would require daily sixty grammes of protein.

Estimation of Carbo-hydrate Tolerance.

The amount of carbo-hydrate which can be given depends upon the powers of the patient to metabolize carbo-hydrate and may be estimated experimentally by gradually increasing this substance in the diet, after the method of Allen already mentioned.

Alternately, the carbo-hydrate and fat requirements may be calculated from formulæ which take into account the due relationship between protein, carbo-hydrate and fat. Wilder's formulæ are as follows:

(i.) C. (carbo-hydrate, in grammes) = $0.024 M$. (M = total calories required) — $0.41 P$. (protein, in grammes).

(ii.) F. (fat, in grammes) = $4 C$. (carbo-hydrate) + $1.4 P$. (protein).

Applying these formulæ, the requirements in the given case are: Carbo-hydrate 18.6 grammes, fat 158.4 grammes. The estimated diet would be, therefore:

Protein 60 grammes supplying $60 \times 24 = 240$ calories; carbo-hydrate (say) 20 grammes supplying $20 \times 4 = 80$ calories; fat (say) 160 grammes supplying $160 \times 9 = 1,440$ calories; total, 1,760 calories.

Nomographic Charts.

To eliminate these irksome calculations, charts have been devised which allow a graphic estimation of the dietetic requirements. The calories required are estimated from body weight and height. On the reverse side of the card the amount of protein required is marked. A straight line joining this point to the total number of calories cuts the remaining upright lines at the appropriate number of grammes of carbo-hydrate and fat.

The diet calculated by either of these means is the "basal maintenance diet," *id est* the diet required to maintain the body in equilibrium, more or less at rest.

The patient may now be placed on this basal maintenance diet. All that is necessary is to translate the grammes of protein, carbo-hydrate and fat into terms of foodstuffs. This is readily done from tables such as that appended.

In mild cases sugar will disappear from the urine at once or after a few days.

Not infrequently it is desirable to get rid first of glycosuria by a preliminary period of starvation. If "sugar free" on the basal diet, the patient's food may be increased until the limit of tolerance is reached. The additional amount of food tolerated is the measure of work of which the patient is capable. Frequent trials may be necessary before it can be determined finally how much food is pos-

sible. In many cases the patient will now be able to carry on with this diet.

"Insulin."

So far the purely dietetic aspect of treatment has been discussed. In very many cases a carefully regulated diet only is the treatment required for the diabetic. If, however, the patient cannot be kept "sugar free" and in health by diet alone, something further becomes necessary. Suppose that after repeated trials, aided by periods of starvation, the patient passes sugar when on the basal diet. It is now necessary to estimate the quantity of sugar excreted in twenty-four hours.

The sugar percentage in a twenty-four hours' specimen of urine is estimated and hence the total daily loss of sugar calculated. The sugar wasted must be balanced by the use of "Insulin."

The units of "Insulin" required are estimated thus:

Daily excretion of glucose (grammes)	} Number of "Insulin" units re- quired.
1.5	

After a period the patient's glucose tolerance may improve so that the quantity of "Insulin" can be reduced. The diet can then be increased by adding 200 calories or more a day and increasing the amount of "Insulin" accordingly. After the pancreas has been rested by restricted diet with or without "Insulin," a considerable restoration of function is often observed particularly in cases of glycosuria of recent onset. In others pancreatic function is so impaired that the constant use of "Insulin" becomes necessary.

By the methods described the practitioner is enabled rapidly to estimate the metabolic powers of the patient and to formulate a dietary. This can be done without special apparatus and without elaborate bio-chemical investigations.

Summary.

The systematic investigation which has been described, may be synopsised thus:

- (i.) Diagnosis;
- (ii.) Calculation of basal maintenance diet;
- (iii.) Arrangement of diet:

<p>(a) Sugar - free on basal diet</p> <p>Diet increased to within limit of tolerance.</p> <p>"Insulin" only if diet is insufficient for work.</p>	<p>(b) Persistently glycosuric on diet</p> <p>Estimation of daily sugar loss</p> <p>"Insulin" given in appropriate doses</p> <p>Increased diet balanced with "Insulin"</p> <p>"Insulin" decreased as tolerance improves.</p>
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The diet having been arranged, henceforward the result depends on the ability of the patient to under-

stand the principles of dieting and to live by rule, weighing his food, testing his urine and using his own intelligence.

These things are possible, but difficult. Joslin's "Diabetic Manual" has been found of great value in instructing patients in these essential matters.

In milder cases the diabetic is often enabled to continue at work; in severe cases life may be rendered at least tolerable and the danger of coma averted.

It will be seen from the foregoing observations that treatment is still essentially dietetic. "Insulin" is a useful agent in the severer cases. It is, moreover, a weapon of great utility in the treatment of coma.

The question naturally arises: "Is it possible to treat a patient with 'Insulin' outside of hospital under the conditions of country practice?" With due care I believe that it is possible and safe so to do, provided that the patient is possessed of intelligence, is warned of the symptoms of hypoglycæmia and instructed particularly how to counteract this condition by the ingestion of glucose. "Insulin" at present must be regarded as a useful adjuvant to treatment. It does not "cure" diabetes in the sense of removing the disease. In private practice it has a sphere of usefulness limited by the essential difficulties of hypodermic administration.

Appendix.

TABLE OF FOOD VALUES (AFTER JOSLIN).

	Carbo- hydrate.	Pro- tein.	Fat.	Calor- ies.
30 Grammes or 1 ounce of—				
Broth	0	0.7	0	3
Milk	1.5	1	1	19
Bread	18	3	0	84
Butter	0	0	25	225
Egg (one)	0	6	6	78
Bacon	0	5	15	155
Fish (cooked)	0	6	0	24
Meat, lean (cooked)	0	8	5	77
Chicken (cooked)	0	8	3	59
Oatmeal (dry)	20	5	2	118
Cheese	0	8	11	131
Oysters (six)	4	6	1	49
Sardines	5	5	0	20
Potatoes	6	1	0	28
5% Vegetables	1	0.5	0	6
(Lettuce, cucumber, spinach, asparagus, rhubarb, marrow, celery, mushrooms, tomato, cauliflower, cabbage, radish, leeks <i>et cetera</i> .)				
10% Vegetables	2	0.5	0	10
(Beans, pumpkin, turnip, squash, beetroot, carrot, onion, watermelon, orange, pineapple, peaches.)				

Reports of Cases.

"PACHYMEINGITIS CERVICALIS HYPERTROPHICA."

By ARTHUR M. WATKINS, M.B., B.S. (Melbourne),
Griffith, New South Wales.

A.B., A MALE, aged forty-eight years, presented himself for diagnosis at my surgery. He had been treated at Leeton, Albury and a reception house, where apparently

no mental change of serious nature was discoverable. His history given by himself is as follows:

Exactly ten months ago he began to be attacked by severe pains in the neighbourhood of the right and left shoulders and nape of the neck. They grew very severe and he does not remember anything clearly about the following week, save that he was in hospital and some of his friends came to see him. He noticed after this period that his hands and forearms wasted away and his chest seemed to get smaller. Eight weeks ago his breathing began to get quick and difficult and he found difficulty in pronouncing words and saliva commenced dribbling from his mouth. He noticed trembling of the hands and lips. He is now unable to feed himself, but can raise his arms up so that he can scratch his neck which is very itchy. He has been a farmer and worked hard all his life. He is married, his family consists of eleven healthy children.

Examination shows a well-nourished man with the appearance of a slight mental dulness, the hands and forearms are much wasted, giving the so-called deformity known as the "preacher's hand" or "simian." The muscles of the upper part of the arm are flabby and the chest muscles as well and wasting is apparent. The respiratory excursion is very poor, the rate is thirty per minute. The distribution of pain corresponds exactly to the second, third and fourth cervical nerves and these areas are now the seat of numbness and itching. The tendon jerks are very exaggerated though locomotion is good. Ankle clonus is easily elicited and Rhombergism is present. Babinski's sign is not present. No vertebral disease can be detected. No signs of tuberculosis are present. The temperature sense is undisturbed. There are patches of leucoderma at base of the neck. I exclude amyotrophic lateral sclerosis from the diagnosis by the pains and syringomyelia on account of the temperature sense being undisturbed. If it is a tumour the signs are often unilateral. Marie-Tooth's atrophy, multiple neuritis and progressive muscular dystrophy can be excluded.

On summing up, the atrophy of the hands, the pain in the upper parts and the objective sensory disturbances point surely to a diagnosis of "*pachymeningitis cervicalis hypertrophica*" with extension upwards to the medulla and pons.

ATAVISM AND ENDOCRINE PECULIARITIES IN PIGS.

By GUY P. U. PRIOR, M.R.C.S. (England),
L.R.C.P. (London).

Medical Superintendent, Mental Hospital, Rydalmere,
New South Wales.

With a Pathological Report

By JOHN I. HUNTER, M.D., Ch.M. (Sydney),
Challis Professor of Anatomy, University of Sydney;
Honorary Consulting Neurologist to the
Lewisham Hospital, Sydney;

AND

OLIVER LATHAM, M.B. (Sydney),
Pathologist, Department of Mental Hospitals,
New South Wales.

The first of the monstrosities which are subject of these notes, was born on February 25, 1923, at the Mental Hospital, Rydalmere, New South Wales (see Figure I. and Figure II.). The parents were both pedigreed Berkshire pigs and were both entered in the Berkshire stud-book. It shows well-marked atavistic peculiarities and also in itself and in its family history some endocrine abnormalities. This raises the question as to whether the latter can influence the former.

It is a pig of large size and was found dead in the sty. It weighs one kilogram, measures fifteen centimetres at the shoulder, its girth is twenty-five centimetres, the length from the base of the trunk to the root of the tail is



FIGURE I.
Showing Pig Number I.

thirty-two centimetres and the upper trunk measures five centimetres in length.

This pig has much resemblance to an elephant, its body is quite hairless; healthy pigs are born covered with hair. It has two fairly well formed trunks, the upper is the larger and the better formed, but was originally bent upon itself instead of being straight. This trunk has an orifice at the tip. The lower trunk which may be a prolongation of the lower lip, is shorter and more slender than the upper one and has no opening at the tip. The ears are large and elephantine and are set far back, the tail is longer and straighter than generally found in pigs. The formation of the bones of the skull is more like that seen in an elephant than in a pig. Here the likeness to the former animal ends. But there are several other abnormalities. In the skull are no orbital fossæ. There is only one eye which is unusually large and has a congenital opacity of the lens. It is placed between the two trunks, where we would expect to find the mouth; the surrounding tissues resemble eyelids more than lips, there being a fringe of hair around the eye. The thyroid is distinctly and visibly enlarged. There are no well defined organs of generation, there is a fullness of the skin where the scrotum should be, no testicles can be felt, there is no visible or palpable penis and there is a pin point orifice near the umbilicus which may be the urethra.



FIGURE II.
Showing Pig Number I

Like the pig and unlike the elephant there are numerous nipples. The hoofs are those of a pig. An X-ray picture taken of the skull, shows the frontal bones to be much more vertical than is seen in the skull of a pig. In this animal the frontal bones are more horizontally placed, they have but small cranial capacity, the nose and forepart of the head tend to be pointed. The orbital plates of the frontal bones appear to be much prolonged backwards and this seems to have pushed very much backwards the ethmoid and sphenoid bones, so that they are close to the *foramen magnum*. The pituitary fossa is distinctly seen. Within the upper trunk are placed the nasal bones which have been fractured in an attempt to straighten the trunk for photographic purposes. There is no superior maxillary bone, but there appears to be part of an ill-formed inferior maxilla. Within the lower trunk is what looks very like a tusk.

The pig was one of a family of fourteen, all of which were either born dead or died within two days of birth. The mother was apparently healthy and in good condition. In the litter previous to this, however, she had given birth to eight pigs, all of which she failed to rear.

The second monster was born on August 6, 1923, to a daughter of the mother of the first and by a different boar. On this occasion this sow had a litter of four only, none of which she was able to rear. Two were reared on a foster mother, one died and the monster was still-born. The mother also carried an excess of condition and it was found impossible to reduce her to a normal state and to this the farm supervisor attributes the fact that the sow was unable to suckle even two young.

The second monster weighed six hundred and fifty grammes, from root of tail it measured twenty-nine centimetres, the height of the shoulder was sixteen centimetres, it was quite hairless and had only one orbit in the centre of a much deformed head. There were upper and lower eyelids both bearing lashes, the lids were adherent to the structures beneath, so that when separated there was no

more than a narrow slit between them. No well defined eye was apparent beneath this slit. The eyelids from canthus to canthus measured eighteen millimetres, the lower lid had a cleft in the centre. There were two umbilical cords, one in the usual situation, one in the middle of the forehead just above the cyclopic eye. The head and jaw were much deformed, the whole head and face were asymmetrical and turned to the right.

The jaws were much undershot and there were several teeth. Between the two jaws was a very peculiar formation, adherent by a stalk to the floor of the mouth and

projecting from it was an oval tongue with a central depression. There were no nostrils or nose. On the left leg there was no foot and the right foot was in a condition of *talipes varus*. The ears were deformed and asymmetrical and there was a fullness in the thyroid region. An X-ray picture of the skull to be so compressed that it was difficult to differentiate them.

The interior maxilla seemed to form the greater part of the head and face. The superior maxilla could not be defined. The frontal bone beneath the umbilical cord was depressed and appeared like a depressed fracture, the orbital fossa was very shallow and below it was a projection of bone which was probably a nasal bone. The bones forming the base of the skull could hardly be defined owing to being much compressed within a narrow space.

A dissection was made of this pig. There was some erosion of the frontal bone beneath the umbilical cord. The orbital fossa under the eyelids con-

tained an ill-formed eye, not much larger than a pin's head. The bones of the skull were thick and there was very little cranial capacity. The contents of the cranium weighed nearly one gramme. There was a tiny cerebellum, but apparently no cerebrum. A small mass of nerve tissue was present that looked more like spinal cord. The mass was solid, having neither convolutions nor ventricles. What appeared to be the thyroid was very fibrous and probably functionless. There was very much

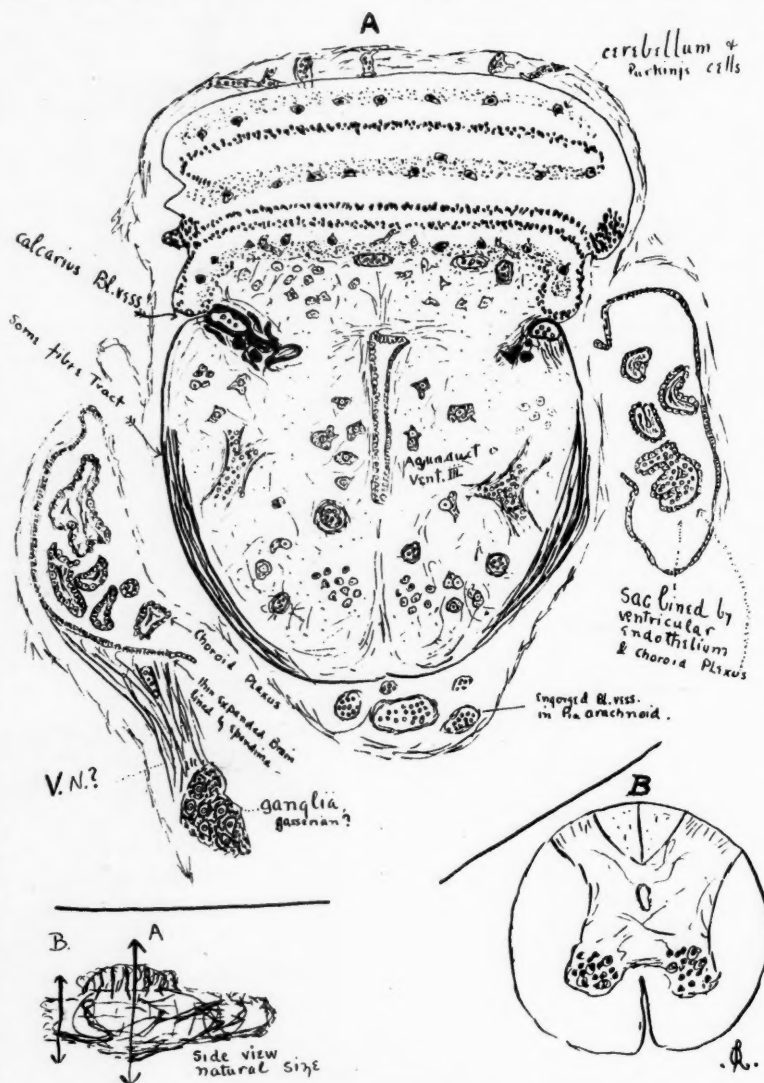


FIGURE III.
Drawing made from Section cut through Upper Part of Cord
and Cerebrum of Pig Number II.

oedematous subcutaneous fat. The liver weighed twenty-one grammes, the kidney four grammes and the thyroid about seven hundred milligrammes. Other points of interest were, the great weight of the liver as compared with the cranial contents. Neither lung was enclosed in a pleura; it is stated in Harmsworth's "Natural History" that elephants have no pleura. There were no suprarenal capsules, the animal was almost if not quite anencephalic. It is stated that anencephalic monsters have no suprarenals. The cranial contents, the thyroid and liver have been kept for microscopical examination.

The mother of this monster had previously been a successful mother of healthy litters. The fact that a young sow fails to rear one litter and loses all of the next within two days as in the first case and from no cause but inanition, might indicate some endocrine deficiency. From this point of view there is an interesting family history. A full sister to the sow I. and an aunt to sow II., had two litters of eight and reared none of either litter. This sow became very fat on a restricted diet and to her excess of condition was attributed the death of her young. After the death of her second litter to render her more fit for breeding it was decided to make even more determined efforts to reduce her condition. For three months this sow received no food but the grass growing in a small run. As on this diet she did not lose weight, she was thought unfit for stud purposes and was sold as a "backfitter." It is highly probable that this sow was myxœdematous.

Abnormalities can be produced as a result of endocrine disturbances in the parent or foetus, as witness the fact that Mongolian children are usually the last of large families, born often of athyreoid mothers and when the endocrine system is in a state of exhaustion.

McCarrison says:

There is no more constant feature in the history of subthyroid persons than that of a subthyroidic history.⁽¹⁾

The prematurely born goitreous goat produced by McCarrison by feeding the parent on faecal cultures from a patient with goitre was born hairless.⁽²⁾ Cretins are frequently the children of women suffering from tetany or may be the children of athyreoid mothers.⁽³⁾

Cannon says:

Hart and Steenbock by giving pregnant sows mainly protein food have produced pigs without hair. The explanation given is that the protein feeding makes a demand on the thyroid, equivalent to depriving the gland of necessary iodine, producing a lessened thyroid activity.

Cannon also says:

According to Ennis Smith what he calls foetal athyrosis, the disorder of domestic animals characterized by lack of hair, thin brittle hoofs, low iodine content of the thyroid, occurs in regions where goitre is more or less endemic. The iodine content in domestic animals is lowest in March and April, highest in September and October. It is very significant that litters of pigs born in March and April are more frequently affected with disease than those born in May and June.⁽⁴⁾

The symptoms above described are suggestive of a congenital myxœdematous state occurring in the offspring.

In an article by Winkler in "Opera Omnia," 1920, is a short account of eight cyclopic monsters. In only one case, that of a lamb, is the condition of the thyroid mentioned and in that instance there was no thyroid gland present.

He states that the characteristic in all these brains examined by him was the "presence of a sack with a thin wall formed by the roof of the third ventricle largely distended by fluid."

Considering its atavism from what can these specimens have inherited their elephantine resemblance? The origin of the pig seems rather uncertain. The pig is said to be the link between the cloven-footed and whole-footed quadrupeds.⁽⁵⁾ It is stated in Harmsworth's "Natural History" under the heading "Elephants and Their Ancestors":

Many other species are of late tertiary date and died out a little earlier and among these were some curious

small elephants from three to five feet high. . . Remarkable discoveries have been made of an interesting group of fossils of mammals which are believed to be the ancestral forms of the entire elephant tribe. The earliest of these is an animal not very different from the ancestral swine and tapirs of very small size."

An extract from the "Guide to Fossil Mammals in the British Museum" is quoted in the same chapter as follows:

The fossils so far as known show that the earliest forerunners of the elephants were small marsh dwellers which lived on succulent food in the African regions.⁽⁶⁾

In the chapter entitled "Extinct Proboscideans" are described:

Other mastadons (Tetrabelodon) in which the front of the lower jaw is produced into a long trough-like chin, exceeding in length the rest of the skull and terminating in a pair of small tusks. Obviously a creature with a lower jaw of this inordinate length must have the nose and upper lip prolonged to an equal degree.

The author traces the development of the elephant to these.⁽⁷⁾

These monstrosities exhibit both atavistic and endocrine peculiarities. To what, if to any extent can the one be related to the other? It is known that hair, bone, skin, general appearance and character can be greatly influenced by the endocrine and the instincts changed by transplantation of glands, as in the large bone formation and increased growth of hair in acromegalic conditions, the loss of hair in athyreoid conditions, the changed distribution in apituitarism and the increased growth in cases of over-suprarenal activity. It has been shown that endocrine dystrophies in the mother may influence the foetus and that removing or grafting glands and feeding with glandular extracts will profoundly alter growth, development and instincts. This being so, is it not possible that the glandular organs may play a part in producing atavism?

Pathological Report.

As noted by Dr. Prior, the contents of the cranial cavity were very small, all the tissue received by us corresponding to what looked like the upper part of a human spinal cord slightly expanded and pointed at the anterior end which had also been damaged during extraction. The posterior end of this finger-like brain seemed capped by cerebellar tissue and torn and displaced membranes enveloped part of the specimen. There was no sign of cerebral hemispheres and apparently brain stem and cerebellum only were represented together with a sac on either side with a wall composed of thinned out nervous tissue lined by typical ependyma and enclosing typical chorioid plexus with pia-arachnoid outside all. We believe these sacs represent thinned out lateral ventricles taking the place of the cerebrum. Perhaps in the undamaged brain *in situ* these two sacs might have been continuous with a common sac, an expansion of the third ventricle, with a roof composed of similar, thinned-out nervous tissue and lined with ependyma. We have noted like conditions in human *agenesia cerebelli*.

We have arrived at this conclusion after reading Winkler's description of his cases in which these sacs are always present, but in his experience take the place of the non-developed cerebellum or brain stem.

The drawings (see Figure III.) have been taken from sections made through the upper part of the cord and somewhat obliquely through the middle of the cerebellum. As several sections were examined, the drawings are both composite and somewhat diagrammatic. They are magnified about eight times. The cross section therefore appears to traverse either the aqueduct or posterior end of the third ventricle and very large nerve cells are scattered on either side of it like the large motor cells of the striatum. Other groups may be found at the sides and ventral areas and many of them show chromatolysis while the neuroglial elements are increased. Blood vessels everywhere are engorged and some sets show definite calcareous degeneration. Many smaller nerve cells abound both here and in the cord. Typical cerebellar tissue in simple lines is fused on to the top of the brain stem and contain the usual layers—molecular, granular, medulla and cells of Purkinje. Running round the ventral half of the

midbrain is a definite fibre tract and what appears to be a cranial nerve outside with ganglion or at least unipolar pear-shaped nerve cells with very fine granules not very evident and capsule cells surrounding them. A short extract from an article by Winkler may explain these conditions better: (6)

Characteristic of all the cyclopic monsters is the presence of a sac (or sacs) with thin walls formed by the roof (or sides or floor) of the ventricle filled with fluid.

He does not think we can always place the terminating time of the cyclopia at a period preceding that in which the sagittal suture appears.

Many types have been noted . . . in "synotia" the cranial floor, base of brain, tongue, lower jaw *et cetera* may be deficient. Sometimes all the components of the face may be missing . . . "synotia" and "cyclopia" thus co-existing.

In regard to causation he says:

Suppose we discard the idea of insufficiency of germ plasm, it seems a simpler view to take the sac as the point of origin. The pathological process that calls forth the sac (which always seems to be present) is able to destroy some or all of the dorsal or ventral brain or *pes pedunculi* and tissues which over- or underlie them . . . eyes, ears, face (including *os ethmoidale* leading to fusion of the orbits), jaws, tongue, mouth *et cetera*, in a word all that is going to be formed from the first branchial arch; so that a local process of inflammation mechanically produces a defect more or less circumscribed, the ultimate picture depending on the area and intensity of the primary damage.

Lastly he alludes to Dr. Murk Jansen's theory that narrowness of the amnion may produce the sac as well as the defect by compressing the head of the embryo.

Acknowledgment.

I am indebted to Mr. McGill, of Rydalmere, for the photographs.

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- (2) R. McCarrison: "The Thyroid Gland," page 98.
- (3) R. McCarrison: "The Thyroid Gland," page 129.
- (4) W. B. Cannon: "Invitations to Research in Endocrinology," *Endocrinology*, Volume VI., No. 5.
- (5) Maunders: "Natural History," page 321.
- (6) Harmsworth: "Natural History," page 65.
- (7) Harmsworth: "Natural History," page 817.
- (8) Cornelius Winkler: "On Cyclopia with Conservation of the Rhinophalon," from "*Opera Omnia*" Supplement, Haarlem, De Erven F. Bohn, 1920.

Reviews.

IMMUNITY IN GENERAL PRACTICE.

In the preface to his book on therapeutic immunization¹ the late Ford Robertson claims that medical treatment is at present chiefly palliative, that the aim of medicine should be to arrest the causes of disease and that it is for this reason that therapeutic immunization has a distinctive claim to consideration and should receive much wider recognition from physicians and surgeons.

The author protests against the absence of systematic instruction in this subject in medical schools, also against the improper and random use of stock vaccines and other bacterial products in all sorts of clinical conditions in which the bacterial flora have not been ascertained.

The treatment of the subject of immunity in general is along easily intelligible lines and is not unconventional. In particular he doubts the advantages claimed by some for sensitized and detoxicated vaccines. He does not produce evidence, however, for his contention that the degree of protection against bacterial infection is exactly proportionate to the tolerance to the bacterial toxin. Then

follows a good description of bacteriological methods and of the different bacterial groups and species infecting man. He is somewhat hazardous perhaps in describing the pneumococcus of pernicious anaemia and the pneumococcus of rheumatoid arthritis. He goes on to describe the methods he advocates for the clinical investigation of bacterial agents in infections of the different systems. He describes his technique for the preparation of vaccines, the gravimetric method of standardization and dosage being wholeheartedly preferred to the use of numbers of bacteria. The different phenomena that may follow vaccine inoculations, are described under the headings of local, focal and general reactions.

Not many bacteriologists, however, would be prepared to concede the author all his claims as to the bacterial causes of some clinical conditions nor to admit therefore the specificity of the methods of immunization from which he claims such promising results. We do not doubt his successes in some cases by these methods and the experimental use of vaccines prepared from organisms found in local sites of infection by competent bacteriologists is to be commended to physicians and surgeons in clinical conditions of doubtful etiology. These chapters are somewhat marred by doubtful observations, *exempli gratia* "the *Streptococcus faecalis hemolyticus* is a common pathogenic bacterium in the intestine" and "its pathogenic action in the intestine is very commonly manifested in association with that of anaerobic diphtheroids. It seems to aggravate the neurasthenic disorders to which the latter give rise, and to cause especially states of slight mental confusion" *et cetera*. He lays perhaps undue stress also on infections by aerobic and anaerobic diphtheroid bacilli and suggests that they play some part in the lesions of general paralysis of the insane. There is much special pleading in these chapters and some paragraphs tend to mar a book which otherwise in many ways fills a long-felt want. Careful revision by a more orthodox person is necessary before it can be placed unreservedly in the hands of students or young practitioners.

DISEASE IN INFANCY.

"THE MANAGEMENT OF SICK INFANTS" is the title of a book written by Langley Porter and William E. Carter.¹ In the foreword the authors state that they do not know of any book in the English language which deals exclusively with the peculiarities of disease as it occurs in infants. Their object in writing this book is to supply the need which they feel exists for such a work.

In the first part consideration is given to such symptoms as vomiting, diarrhoea, pain and tenderness. The causes of nutritional disturbances are discussed under the headings of over-feeding, under-feeding, variations in the infant's digestive powers, variations in the infant's metabolism and bacterial processes in the intestine. The chapter on diarrhoea with a general scheme of management of the condition should prove helpful.

The second part is devoted to diseases of the various organs. A short description of the disease is given with its appropriate treatment. There is a large chapter on diseases of the nervous system which contains much useful information. Special stress is laid on a proper training of the infant as an essential factor in the prophylaxis of neurosis. The condition of the reflexes peculiar to infancy is described.

Perhaps the most valuable part of the book is contained in the third part, where the various methods used in the treatment of infants are described. The illustrations in this section of the book are excellent and add greatly to the value of the text. Simple methods, such as gastric lavage and bowel irrigation, are given as well as the more complicated ones, such as puncture of the *cisterna magna*. The book concludes with a chapter of recipes and formulae.

On the whole this book contains much useful information and should prove helpful to the practitioner, so much of whose work lies amongst sick infants.

¹ "Therapeutic Immunization in Asylum and General Practice," by W. Ford Robertson, M.D.; 1921. Edinburgh: E. & S. Livingstone; Demy 8vo., pp. 278. Price: 15s. net.

¹ "Management of the Sick Infant," by Langley Porter, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Lond.), and William E. Carter, M.D.; Second Revised Edition, illustrated; 1924. St. Louis: C. V. Mosby Company; Royal 8vo., pp. 659. Price: \$8.50.

The Medical Journal of Australia

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The Next War.

THE Executive Committee of the Congress last year selected one subject and one only for discussion in the Section of Naval and Military Medicine and Surgery. Colonel G. W. Barber read the only paper on this one subject. It has been published in the Supplement of our issue of July 12, 1924. The subject is the organization of the medical profession in Australia in time of war. Dr. Barber's calm yet forcible indictment of the authorities for permitting the Australian Army Medical Corps to become less efficient than it was immediately before the war in 1914 is arresting. He points out that the organization was incomplete at that time; today it is incomplete "even on paper." There is little doubt but that as time passes, this essential branch of our defence forces will become less and less a reality until at length it will exist only on paper and in the imagination of politicians. Dr. Barber proceeded to sketch a plan for the organization of the medical profession in peace time so as to render an effective organization in time of war possible. The members of the Section were of one mind concerning the importance and urgency of this matter. Doctors do not always disagree. Some proposals were submitted to the Federal Committee of the British Medical Association in Australia with a recommendation that action be taken.

A considerable time has elapsed since Colonel Eames urged the Federal Government to constitute the defence medical services a separate arm of the defence forces and to place this service under one administrative head. This journal has advocated this plan on many occasions on the ground of economy, efficiency and practicability. It has been pointed out that the experience gained in the war is invaluable and that unless something drastic be done, this experience will be lost. To sanction such a waste, even to be aware of the possibility and

to take no steps to prevent it is a very serious matter. When it is remembered that the failure may be a contributory cause of danger to the whole Commonwealth, the attitude taken of doing nothing to maintain an efficient defence medical service for the Navy, Army and Air Force must be regarded as an utterly indefensible crime.

One of the proposals of the members of the Section was that all medical practitioners should be liable for service in time of war. In the event of a war at home in Australia such an expedient would be essential and unavoidable. If there were another war elsewhere in which Australian troops were to take part, this method would be preferable to the voluntary system that obtained from 1914 onwards. It must be remembered that in July, 1917, three-quarters of the members of the medical profession then in Australia who took the trouble to record their vote, expressed themselves in favour of the proposal to urge the Federal Government to conscript the medical profession for war service. It was a very remarkable demand, remarkable in that the men who made it, were those who had not volunteered for service or who, having offered themselves, had been rejected. We are unaware of a similar demand having been made by any other body of citizens. Had the offer been accepted, the authorities would have been compelled to adopt a scheme for the mobilization of the whole of the medical profession and the establishment of two classes of medical practitioners, those required for war service abroad and those detailed for civil service in Australia. When the requirements of war include the calling up of large numbers of medical practitioners, a well organized service for the people in Australia becomes necessary. The chance method followed during the war is fraught with difficulty and danger and is not in the interests of the people. In a national emergency all individual rights must be subordinated to the needs of the Empire and it would be well if the principle on which this depends, were recognized in advance. But this is not enough. We must have in readiness a machine capable of expansion and efficient in the performance of its functions. To have a large body of medical practitioners available for war service would be worse than useless unless a reasonable

proportion of them had had training in the Army Medical Corps and unless those on the permanent staff were men of experience in military matters. We are therefore driven back to the position whence we started, namely that it is imperative that the Australian Army Medical Corps in peace time shall be maintained at a high degree of efficiency. The Federal Government turns a deaf ear to all proposals involving expenditure of money on defence. There is no need to refrain from urging this important reform, for the Government at present expends vast sums of money on far less serious and urgent matters. The time is ripe for the amalgamation of the medical services of the three branches of the defence forces and for the proper establishment of a permanent medical service. At the same time the suggestions of the Section of Naval and Military Medicine and Surgery in regard to adequate training of all medical undergraduates in the medical services of the Citizens Forces and to the adoption of conscription in case of war, should be accepted. It is quite conceivable that an exigency might arise in which there would be no time to remedy unpreparedness. Readiness is necessary for safety.

Current Comment.

PYORRHOEA ALVEOLARIS.

THE disease known as *pyorrhœa alveolaris* or chronic general periodontitis is of interest to medical practitioners chiefly in view of the part it is held by many to play as a focus of infection in the production of disease. Although much has been determined in regard to the origin and development of the disease and the pathological changes produced in the affected tissues, a great deal still remains to be determined. This is evidenced in a striking manner when consideration is given to the many different methods of treatment that are adopted for its cure. The statement is almost axiomatic that satisfactory therapeutic measures cannot be undertaken if the pathogenesis of a disease has not been determined with accuracy.

Pyorrhœa alveolaris consists in a progressive destruction of the tooth socket and is accompanied sometimes in the earlier and almost always in the later stages by a free discharge of pus from the gum margin. K. W. Goadby described the essential pathological change as a rarefying osteitis of the alveolar process and of the body of the bone as well. He said that the alveolus became replaced by

succulent granulation tissue in which were numerous bacteria. He also pointed out that if the total tissue involved were computed, it would be found in many instances to comprise about one-sixth of the whole jaw. A wide area of absorption in intimate relationship with the blood stream was thereby provided.

The histo-pathology of the disease has been studied in the lower animals. Talbot found that the earliest manifestations in dogs were seen in the gingival margin and that with the progress of the disease both the periodontal membrane and the bone became involved. He showed that absorption of the bone is at times rapid and takes place by lacunar absorption, by the formation of perforating canals and by halisteresis or disappearance subsequent to absorption of lime salts. All writers do not hold the view that the disease starts at the gingival margin and gradually affects the tooth attachments. Gottlieb and Fleischmann stated that atrophy of the bone was the primary causal factor in the aetiology of the disease. They claimed that there was ample evidence of destruction of bone by autolysis before the occurrence of the small-celled infiltration of the gingival margin. In this connexion it is interesting to note that changes in the mouth may be secondary to primary diseases elsewhere. This fact was emphasized by Goadby and he referred amongst other things to scurvy, intestinal inflammations and lymphatic leucæmia. He stated that whatever the predisposing causes were, the liberating cause of local gum disease was always bacterial infection. Colyer in commenting on the views of Gottlieb and Fleischmann in regard to the small-celled infiltration of the sub-epithelial tissues said that it was the reaction of the mesoblastic tissue to the invading epithelium. Colyer in summing up his views of the aetiology of *pyorrhœa alveolaris* stated that the evidence points to the disease being started by injury of the gingival margin from food debris or by the local action of toxins as seen in the marginal gingivitis of mouth breathers.

A discussion was held recently at a meeting of the Section of Odontology of the Royal Society of Medicine on the prevention and treatment of *pyorrhœa alveolaris*.¹ It is interesting to note how few of the speakers made reference to the pathogenesis of the condition.

Mr. J. G. Turner said that he regarded *pyorrhœa* as the result of an attack made by various germs on the alveolar and dental tissues and originating at the necks of the teeth. Germs were in the habit of clinging tenaciously to the surface of the teeth and resistance to the attack was measured by the vital force of the tissues and was affected by local arrangement of the teeth in the mouth. Both these peculiarities lay in the natural contours and insured the stagnation of finely ground, sticky food in close contiguity to the edges of the gums. For these reasons he called *pyorrhœa* a "dirt" disease. In the absence of "dirt" no general disease would produce *pyorrhœa*. If "dirt" were present, the

¹ Proceedings of the Royal Society of Medicine, May, 1924.

healthiest person would sooner or later manifest clinical signs of the failure of resistance. He held that this point was proved by the absence of gum disease in clean mouths during mercurial treatment or during an attack of scurvy and also by the ready response of affected gums to local treatment in the absence of all general treatment. In regard to the prevention of pyorrhœa Mr. Turner laid stress on the importance of maintaining the general health at a high standard, on the importance of food which was not of a "sticky" nature, on the desirability of having the teeth arranged in such a way that the neck of each tooth is cleansable in its entire circumference and finally he wanted an antiseptic which would eat its way through the overlying mucus, dissolve the sticky food debris, find its way into the periodontal sulcus without being put there and kill the ultimate germ adhering to the tooth neck. Such an antiseptic had not yet been found. The best way of securing arrangement of the teeth suitable for ideal cleansing purposes was to extract the first permanent molars at the age of fourteen to sixteen years. He said that he was not at all alarmed by the possibility of mal-occlusion or traumatic occlusion. In the treatment of the condition when once it was established Mr. Turner referred to local treatment of the gums and to extraction of alternate teeth to allow of adequate drainage. He finally referred to the necessity of teaching patients to clean their teeth by toothbrush, waxed thread and worsted thread.

Mr. E. Sturridge said that prevention of pyorrhœa was more important than its treatment. He did not agree with the suggestion that the four first molar teeth should be extracted at the age of fourteen to sixteen years. He thought that this was more likely to lead to pyorrhœa. Mal-occlusion and abnormal spacing were prone to develop. Undue stress was often the sole cause in starting periodontal disease at points where periodontal occlusion occurred. The best method of applying antiseptics was by means of ionic medication.

Sir Harry Baldwin thought that the first thing to become inflamed and infected was the free edge of the gum. Infection was occasioned by the ordinary organisms present in every mouth. Infection took place when the gum was low in tone owing to the absence of friction. Friction acted by vitalizing the tissues. Though tartar was a most important accessory in the causation and exacerbation of pyorrhœa, it could not be said to be the actual cause.

Mr. F. W. Broderick thought that they would not get very far in the discussion of a disease in which the aetiology was so uncertain as was that of pyorrhœa. Mr. Turner seemed certain that pyorrhœa was a local disease brought about by local conditions, he (Mr. Broderick) was certain that it was not. Those who held the view that pyorrhœa was a local disease caused by local conditions, appeared to believe that certain general diseases predisposed to it. They held that in the presence of these diseases there was some change in the vitality of the tissues which tended to bring about pyorrhœa, that the diseases themselves were by no means essential as a causative factor and that pyorrhœa might arise without them. If they could

find a common factor among the predisposing diseases they would be going a long way towards arriving at a decision as to first causes. In this search it was necessary to go very deeply into the pathology of these predisposing diseases. He thought that a disturbance of the acid base equilibrium of the blood was common to them all. He thought that this upset could be found in cases of pyorrhœa which apparently arose without any predisposing disease. In such instances the upset was in one direction, namely towards an excess of base. If pyorrhœa was simply a dirt disease, it was difficult for him to understand why it should occur so much more frequently at certain periods of life and in certain types of people and also why carbohydrate stagnation could cause pyorrhœa in one individual and dental caries in another. He thought that if he were right in regard to the aetiology of pyorrhœa, treatment should be aimed at diminishing the quantity of alkali in the body. This could be brought about by neutralization or elimination. The simplest method was by increasing the formation of carbon dioxide together with the acid products of fatigue by taking exercise. A diet that would give an excess of acid metabolites, should be taken.

After several speakers had criticized adversely Mr. Turner's treatment by extracting the premolar teeth for prophylactic purposes and alternative teeth for treatment of well-established cases, Mr. W. Hearn drew attention to the occurrence of pyorrhœa in those portions of the mouth from which friction either natural or artificial was absent, such for example as areas under artificial plates, around teeth which were not antagonized by teeth in the opposite jaw. There was no clear line of demarcation between gingivitis and pyorrhœa. If pyorrhœa was a local disease, it was a preventible disease and it was a most important duty to teach patients how to prevent it.

Mr. D. R. Curnock referred to the frequent and more serious infection of the bone. This might involve the whole of the alveolus. The deep infection of the bones of the jaws was shown on skiagrams as either a porosis of the deeper bone or else a sclerosis. He thought that the indifferent results obtained in many cases of extraction for pyorrhœa were frequently due to clinically sound teeth being left. Radiological examination would as a rule reveal infection in these teeth.

VISIT TO THE ROCKEFELLER FOUNDATION.

THE International Health Board of the Rockefeller Foundation has invited the Director-General of Health to visit the United States of America at their expense for the purpose of making a personal inquiry into the several phases of their organization. This generous action is greatly appreciated as a high compliment to the medical profession in Australia. It will lead to a closer *liaison* between the Board and our health authorities to the undoubted advantage of the Commonwealth. Dr. Cumpston sailed for America on July 17, 1924. The results of his investigations will be watched with great interest.

Abstracts from Current Medical Literature.

MEDICINE.

Pernicious Anæmia of Pregnancy.

V. C. ROWLAND (*The Journal of the American Medical Association*, February 2, 1924) records two instances and discusses the literature on the subject of the pernicious or hæmolytic anæmia of pregnancy. He states that comparatively few cases have been reported; in 1917 only twenty-three cases could be collected from the literature. Since then Osler has reported five and others have added to the list. The condition is insidious in its onset during the later months of pregnancy and labour is apt to commence prematurely with little bleeding. The blood picture resembles very closely that of pernicious anæmia; no apparent cause has been detected. Some patients have recovered and in these there has been no recurrence of the anæmia. This form of anæmia has to be distinguished from anæmia due to *post partum* hæmorrhages and acute anæmia of *post partum* sepsis. These are excluded by the absence of bleeding and of sepsis. The severe type of anæmia described here may occur during the later months of pregnancy and be of gradual onset or it may begin within a few weeks of delivery and it often progresses to a fatal issue in from eight to twelve weeks. There is some disagreement as to the blood count, leucocytosis may occur sometimes and occasionally leucopenia. Treatment consists of rest and the administration of arsenic in the early stages. If the condition becomes worse blood transfusion and the termination of pregnancy are indicated. Transfusion should be repeated until active blood regeneration is apparent by an increased red cell count with large numbers of nucleated and reticulated red cells.

Empyema.

R. B. BETTMAN (*The Journal of the American Medical Association*, February 2, 1924) advocates the closed method of treating empyema, especially in children. After local anaesthesia is produced, exploratory puncture is made and then a trocar is forced into the empyema cavity at the site of puncture. The stilet is withdrawn and a No. 14 French soft rubber catheter is threaded through the trocar; the catheter is clamped at its funnel end and it must fit the trocar closely; vaseline is used to simplify its introduction through the trocar. The catheter is held in position by adhesive tape. A catheter which does not closely fit the trocar or the puncture of the catheter with a pin may allow air to enter the pleural cavity and this often causes pneumothorax. Repeated aspiration at two-hourly intervals is done and Dakin's solution is injected after each aspiration to dissolve the pus and

lymph flakes; the amount of Dakin's solution introduced is one-third the volume of the pus withdrawn. If drainage ceases the catheter should be slightly withdrawn. If encapsulation of pus should occur it may be necessary to perform a second puncture. X-rays are of great value in determining the position of the catheter and the occurrence of encapsulation. Further, if a cavity remains towards the end of treatment this can be demonstrated by the injection of sterile 12% sodium bromide solution which is opaque to X-rays. The patient is considered cured when all symptoms have subsided, when the fluid withdrawn is sterile and when the cavity has been obliterated.

Treatment of Neuro-Syphilis.

J. A. FORDYCE (*Proceedings of the Royal Society of Medicine*, March, 1924) discusses the treatment of neuro-syphilis and gives the results of his experiences in this connexion for the last ten years. Fully 25% of all syphilitics present signs of involvement of the nervous system in the first year of the infection. In the treatment of syphilis the patient should not be discharged without an examination of the spinal fluid, for signs of neuro-syphilis. If these signs are found and routine treatment with mercury and intravenous injections of "Salvarsan" have failed to cause their disappearance, injections of "Salvarsanized" serum should be given. The majority of patients with early neuro-syphilis are cured by these methods and tabes and general paresis may be delayed in their progress. Symptoms of tabes such as lightning pains may be due to syphilitic meningitis and this can be cured. Optic atrophy may be stayed in its course by treatment on the above lines. In giving "Salvarsanized" serum by the spinal route lumbar puncture is performed and sufficient cerebro-spinal fluid withdrawn for testing; then thirty or forty cubic centimetres of fluid are allowed to collect in a receptacle attached to the spinal puncture needle, to this is added the inactivated serum and the mixture is allowed to enter the sub-arachnoid space by gravity. Half an hour after the preliminary intravenous injection is the best time for withdrawing the blood. This is permitted to clot over-night in the ice box, the next morning it is centrifugalized and the serum pipetted into a sterile tube, this procedure is repeated to insure removal of all red cells and the clear serum is pipetted into another tube and heated for one-half hour at a temperature of 56° C.. Injections are given at intervals of two weeks or more until six or eight have been given, a rest period of two months is then allowed and is followed by a second series of injections. These are repeated at intervals until the cerebro-spinal fluid fails to react to the Wassermann test. Numbness in the buttocks and genitals and difficulty in micturition are signals for the discontinuance of treatment or lengthening the intervals.

Spinal Analgesia.

H. FEATHERSTONE (*Proceedings of the Royal Society of Medicine*, March, 1924) reports one hundred cases of spinal analgesia with "Tropacocaine." The patients selected were those not well suited for general anaesthesia and suffered from such general conditions as diabetes, albuminuria, eclampsia, severe surgical trauma, diseases of the lungs and air passages, heart disease *et cetera*. The general results were good. Spinal analgesia was not used in those who were subject to shock except in two instances, since a fall of blood pressure is commonly associated with its administration. One and a half to two and a half cubic centimetres of a 5% solution of "Tropacocaine" were introduced into the theca through the second lumbar interspace, the patient lying on one side. The injection was rapidly made and the patient made to lie horizontally with the legs raised. This procedure produced analgesia up to two and a half to five centimetres above the umbilicus. Inclination of the table head downwards caused analgesia as high as the sixth dorsal vertebra. This higher analgesia was used in abdominal operations such as Rammstedt's operation and operation for perforated gastric ulcer *et cetera*. In operations on the upper part of the abdomen by this method the mortality was high. Rapid change of posture was often followed by considerable fall of blood pressure, as much as seventy millimetres of mercury. In no instance was the fall of blood pressure less than fifteen millimetres of mercury. The adoption of the Trendelenburg position as soon as the anaesthetic is given will relieve faintness, but bandaging the legs and compressing the abdomen will not raise the blood pressure. After operation the patients were placed in a horizontal bed with the head on pillows and legs well raised. Apart from fall of blood pressure immediate after effects were rare; headache occurred in 78% of those from whom more than five cubic centimetres of cerebro-spinal fluid were withdrawn. If a minimum quantity was withdrawn, no headache followed. Light narcosis by means of a general anaesthetic was helpful in some patients.

D'Espine's Sign.

W. E. CARROLL AND C. B. GIBSON (*The Boston Medical and Surgical Journal*, February 28, 1924) recall the confusion which is current in regard to D'Espine's definition of the sign which bears his name. D'Espine, in a report to the French Academy of Medicine in 1904, described the sign as a whispering echo following the spoken voice in auscultation over the upper dorsal vertebrae. In a later paper however, he emphasized the value of the whispered voice. The sign is most obvious (he wrote) if the child is asked to speak or count in a low whisper, the voice being then accompanied by an added whispering sound. The majority of medical practitioners accept Fish-

berg's definition, *videlicet* the transmission of the tracheal timbre below normal limits when the whispered voice is auscultated. The authors state that transmission of the tracheal timbre is indicative of abnormality only when it occurs below the seventh cervical vertebra in young children, below the second dorsal in children of eight and below the third or fourth in children of twelve to fifteen years. These differences are due to the descent of the bifurcation of the trachea with increasing age. The mere transmission of vocal resonance does not constitute D'Espine's sign. It is the transmission of the characteristic tracheal timbre which counts. The value of the sign is said to be its occurrence in cases of hilus tuberculosis. Many observers laud it highly, others ignore it, some condemn it or damn it with faint praise. Fleischner styled it "the most consistent sign in bronchial lymph node disease." Fishberg stated that it is more satisfactory than any other symptom or sign at the physician's command. In this opinion Pottenger concurred. On the other hand, the Committee of the National Tuberculosis Association, after a detailed study of the chests of five hundred normal children, reported that the sign as an indication of enlarged tracheo-bronchial lymphatic glands was of little value. The authors regard it as an extremely valuable aid when associated with other evidence of infection.

Carbon Monoxide Poisoning.

A. WILSON AND N. W. WINKLEMAN (*The Journal of the American Medical Association*, May 3, 1924) describes three cases of multiple neuritis following poisoning by carbon monoxide. The changes most commonly described in the literature have been bilateral softening of the *globus pallidus*; multiple neuritis has been mentioned, but no satisfactory pathological examinations reported. Two of the authors' patients were overcome by coal gas and one by the fumes from a charcoal burner, the usual symptoms of gas poisoning were evident and in addition there was tenderness of the nerve trunks and tremor with increased reflexes, except the Achilles jerks which were lost in one instance. The patients lived ten days, five days and three months respectively. One patient poisoned by coal gas suffered with dysphagia and tenderness and pain in the legs and feet. *Post mortem* examination in two instances showed increase of Elzholz bodies with Marchi stain, swelling of the medullary sheath and occasionally swelling of the axis cylinders in the peripheral nerves of the arms and legs. The authors attributed the increased reflexes to changes in the *globus pallidus*.

The Urea Concentration Factor and Renal Efficiency.

I. M. RABINOWITCH (*Archives of Internal Medicine*, December 15, 1923) states that the majority of methods

in use for the determination of renal function are based on the following generalization. When the kidneys become unable to excrete the end-products of metabolism, these must either be excreted more slowly than normally or accumulate in the blood. The degree of retention of these substances in the blood or their rate of excretion in the urine is an index of the degree of impairment of renal efficiency. Tests based on this doctrine include the excretion of solids and phenol-sulphonaphthalein, the estimation of the non-protein nitrogen in the blood (including urea, uric acid and creatinin) and the urea concentration test of Maclean and de Wesselow. In renal lesions associated with azotemia or any other evidence of impairment in excretion of nitrogenous substance, the urea concentration factor appears to be a more sensitive test for renal efficiency than the other tests in use. A distinct advantage of this test is that a combination of both blood and urine studies must be made in each instance.

Erythraemia.

I. S. SUTTON AND W. COLE (*The Journal of Laboratory and Clinical Medicine*, June, 1923) have reported a case of erythraemia in which the erythrocyte count was high. There were 10,760,000 red cells in each cubic millimetre of blood. This figure was carefully checked and found accurate. The haemoglobin value was estimated to be 202% and the colour index 0.94. The leucocyte count was 9,200 per cubic millimetre.

Leuchæmia.

G. R. MINOT, T. E. BUCKMAN AND R. ISAACS (*The Journal of the American Medical Association*, May 10, 1924) report their investigations in one hundred and sixty-six cases of typical chronic myelogenous leuchæmia. The majority of the patients were between thirty-five and forty-five years of age at the onset, though patients of all ages from one to seventy years were liable to the disease. Of these patients 56% were males and 44% females. The onset was insidious with symptoms of fatigue, weakness, loss of weight and gastro-intestinal symptoms. It was probable that there was a long latent period (months or years) in some cases before definite symptoms referable to the leuchæmia developed. Early diagnosis was rare since on the average patients did not consult a medical practitioner till eight months after the onset of symptoms. The duration of the disease has been variously stated to be from two to twelve years. Splenectomy has not in the past prolonged life. The average length of life after the onset in patients in this series was 3.04 years in those not subjected to irradiation and 3.50 years in those treated by irradiation of the spleen with radium or Röntgen rays. Thus life was scarcely prolonged by this treatment. It was noted, however, that the

patients' general health was much improved by irradiation, particularly in the early stages. The authors state that spontaneous remissions were rare in this disease, only four out of fifty-two non-irradiated patients, whereas a return to comparative good health was common after irradiation. The authors state that the doses and methods of application of radium and Röntgen rays are not discussed in this paper. The data had been collected over a number of years and the doses given had been considered efficient at the time of their administration, though not always in accordance with the present ideas of efficient irradiation.

Subacute Bacterial Endocarditis.

B. J. CLAWSON (*Archives of Internal Medicine*, February 15, 1924) states that embolic processes are common in all forms of bacterial endocarditis. They are most frequent in the subacute form. They apparently do not occur in acute rheumatic endocarditis. Embolic glomerulo-nephritis is rarely found in any form of endocarditis except the subacute bacterial type, in which it becomes manifest in a high percentage of cases. The chief factor determining its presence is the congregation of organisms of low virulence on the cardiac valves. *Streptococcus viridans* is the usual organism, but the condition is sometimes produced by *Streptococcus hæmolyticus*. Palpable splenic enlargement associated with evidence of involvement of the heart usually indicates an active inflammatory condition of the valves rather than an enlargement due to passive congestion. The vegetations in acute and subacute bacterial endocarditis cannot be differentiated. They are essentially thrombi. The rheumatic vegetations are differentiated with ease from the bacterial. They are inflammatory vegetations of a proliferative type. Valvular ulceration, which never occurs in rheumatic endocarditis, occurs most frequently in the subacute bacterial type, but it cannot be called a common finding. Hence the term "ulcerative endocarditis" is frequently an unsuitable denomination. Previously injured valves are more susceptible to infection than normal valves. Usually they have resulted from a rheumatic infection, often recurrent and chronic. Pericarditis is usually present in rheumatic endocarditis, but is seldom found in bacterial endocarditis not preceded by a rheumatic infection. Myocarditis seldom occurs in the bacterial forms. The finding of *Streptococcus viridans* in the blood of a person suffering from endocarditis indicates a subacute bacterial form. The presence of *Streptococcus hæmolyticus* or staphylococcus usually indicates an acute form of bacterial endocarditis, but may characterize the subacute form. Whether a case of bacterial endocarditis will assume an acute or subacute course depends on the virulence of the organism rather than on the kind.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Perth Public Hospital on May 21, 1924, Dr. D. P. CLEMENT, the President, in the chair.

Cystadenoma.

Dr. J. R. DONALDSON showed an ovarian cystadenoma which had been removed by Dr. Taylor Thomas.

Ruptured Spleen.

Dr. M. K. MOSS reported the history of a woman who had been admitted to hospital with signs of internal hæmorrhage. It had been found that the spleen was ruptured and an uneventful recovery had followed splenectomy. No history of trauma had been obtained, but it had been thought possible that the woman was shielding her husband.

Acute Yellow Atrophy of the Liver.

Dr. J. K. COUCH reported a case of acute yellow atrophy of the liver which had occurred in a woman after a normal delivery.

Headache.

Dr. D. M. McWHAE, C.M.G., C.B.E., read a paper entitled "Headache" (see page 79).

Dr. H. J. GRAY read a paper entitled "Headaches" (see page 81).

Dr. D. D. PATON read a paper entitled "Characteristics of Headaches" (see page 83).

Dr. CLEMENT in thanking the three readers of papers for their contributions said that he was sure he was voicing the opinion of those present that many valuable observations had been made in regard to the determination of the various forms of headache.

Dr. M. K. MOSS referred to a patient who had suffered from persistent occipital headache. Repeated clinical examination had failed to elicit the cause. X-ray examination of the accessory sinuses had failed to reveal an abnormality and extraction of teeth had given no relief.

Dr. J. K. COUCH regarded interference with the sexual functions as the commonest cause of headaches.

Dr. R. H. M. JULL mentioned the use of calcium lactate in the premonitory stages of a headache as a curative agent.

Dr. K. C. MCK. ABERDEEN quoted instances in which, although improvement had followed the correction of an error of refraction, the symptoms had got worse if the glasses were persistently used.

Dr. R. H. CRISP and Dr. J. E. FERGUSON STEWART also took part in the discussion.

MEDICO-POLITICAL.

A MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Perth Public Hospital on May 21, 1924, Dr. D. P. CLEMENT, the President, in the chair.

Lay Radiologists.

Correspondence was read from the Federal Committee of the British Medical Association in regard to the reference of patients by medical attendants to lay radiologists. It was decided on the motion of Dr. D. D. PATON seconded by Dr. H. J. GRAY to adhere to the decision of the Federal Committee. Dr. W. TRETHOVAN and Dr. J. E. F. STEWART also spoke in favour of the motion.

National Insurance.

Dr. NEWMAN MORRIS has kindly supplied us with the following *résumé* of the evidence given by Dr. J. RAMSAY WEBB on behalf of the Victorian Branch of the British Medical Association before the Royal Commission on National Insurance. It will be remembered that at its meeting held in February, 1924, the Federal Committee requested Dr. Newman Morris to prepare *résumés* of the

evidence given by certain medical practitioners for publication in THE MEDICAL JOURNAL OF AUSTRALIA. Readers are referred to our issues of April 12, 1924, pages 372 to 378, and of July 5, 1924, pages 18 to 20, and pages 21 to 24.

Dr. JAMES RAMSAY WEBB, Ex-President of the Victorian Branch of the British Medical Association, was asked for information in regard to lodge practice under the Wasley Award; he stated that first a dispute began in 1913. At that time the local Branch of the British Medical Association had been compelled to take cognizance of the immense amount of dissatisfaction existing amongst lodge medical officers. It communicated with the representatives of the friendly societies and after a considerable time practically forced them to meet in conference for the purpose of discussing the grievances. It was recognized by the Council of the Branch that the remuneration which the men were receiving, was quite inadequate and that the circumstances under which they were carrying out their work, were not conducive to the best medical work. The remuneration then received averaged about 14s. *per annum* per member and the obligation of the medical officer comprised attendance upon four persons, because the dependants were included. It was claimed by the Branch that 14s. was quite an absurd rate of payment and that it carried the further danger that cheap medical attendance was not likely to be good medical attendance. The Council viewed with apprehension any deterioration in the standard of work and that with a large number of men was the determining cause of the contest which began in 1913 and did not terminate until 1920, when after a Royal Commission had sat the present agreement had been accepted by both parties. That agreement had been in operation ever since. Under it the remuneration was raised from 14s. *per annum* to £1 in the cities and 25s. in the country districts. There were various other modifications, but they were of comparatively minor importance. If the dispute had commenced in 1919 or 1920, instead of finishing then, the claim of £1 *per annum* would certainly not have been made. It would have very much more. That was, of course, obvious because of the variation in the purchasing power of money. Consequently, it could not be said that the rate of £1 *per annum* was anything like adequate for an efficient medical service. Concerning the deterioration of the medical service he must begin by saying that under the circumstances contract medical service in the State of Victoria was of an exceedingly high quality. One had only to remember the tremendous applause received by the medical men of Australia in the war. He had repeatedly heard high praise not only from highly placed officers of the Medical Department of the British Army, but from combatant officers of the efficiency, high training and high sense of duty of the officers of the Australian Army Medical Corps. Nevertheless, it was impossible under existing circumstances for men to give anything approaching ideal medical service, chiefly for two reasons. In the first place, the pay was inadequate. It meant that a man had to take a very large number of lodge members to enable him to make a living at £1 *per annum*. It meant rush work. In the second place, the facilities with which a practitioner had to do his work, were not anything like satisfactory from the point of view of modern medicine. He had neither the time nor the opportunity to apply modern scientific methods of investigation to his cases. Take the case of a man working hard in his surgery and being visited for perhaps eight or ten hours a day and then arriving home at eight or nine o'clock at night with several samples of urine to examine. That man was continuously working broken time. It was a condition of medical work. The doctor was on duty for the whole twenty-four hours, so that he had no leisure for himself. He had certainly not enough leisure to devote to the investigation of his patients. A man needed to be made of stern stuff to come home at eight o'clock at night and sit down to examine samples. Then, if he had an incubator and put a swab from a throat in it, he never knew whether he would be able to examine it at the proper time. That was a permanent condition of the medical service.

An undertaking had been given not to attempt to disturb the present arrangement until 1925, but in his opinion the contract medical officer was not satisfied with his position.

Asked his opinion of the remuneration given to doctors under the British scheme, Dr. Webb said that the rate fixed under the promise of a Commission to examine the whole question was nine shillings. That provided medical attention for the insured person. The dependants were apparently provided for by outside contracts and might be attended either by the panel doctor or by some other contract practitioner. As far as could be ascertained, the rates for dependants varied a great deal. They ranged from about three or four shillings to twelve or thirteen shillings. That was an arrangement made on the voluntary side of the friendly society business. The lodge doctor in Australia or Victoria attended four persons for his £1 *per annum*. In England the panel practitioner received nine shillings for the insured person and possibly an equal or even a greater amount for the wife. There were sums varying from three to five shillings for each child. Therefore, he received more than the Australian lodge surgeon for a similar amount of work. It was necessary to remember also that the amount of work required for the attendance on the head of the family was less than that which was required for attendance on the dependants. Therefore, it was evident that the ruling rate of remuneration for lodge surgeons in Victoria was inadequate. As a general rule, it might be said that the attendance on the wife and children was a greater tax upon the time and attention of the doctor.

Asked on what basis the wage limit in the lodge agreement was fixed, witness said he did not know. The first wage limit was one placed before the societies at the end of last century. It was £200, which he always thought was very low. He thought that New South Wales had a good deal to do with fixing the wage limit. The variations in regard to dependants and widows had been arrived at by the Royal Commission which had eventually decided the matter.

Asked what had been his experience with regard to the statement made by friendly society representatives that the medical officers were very careless in the issue of certificates for members to go upon the lodge funds, Dr. Webb said he did not think that they were careless. When a man entered a lodge the examination was carefully made and the certificate was carefully filled in. Of course, the demands made by the lodges for certificates were very irksome to the doctor. When he was examining a patient and considering his case, it was very annoying to be interrupted with a demand for two or three certificates. In his experience, however, it was always seen that any attempt at malingering or at undue prolongation of illness was stopped. Difficulty sometimes arose when a man was receiving sick pay from two or even three sources. He was reluctant to go off the sick list and had frequently to be brought up with a round turn. The Commission could take it that generally speaking the doctors satisfied themselves that the patients were legitimately incapacitated.

Asked if he were personally in favour of a scheme of national insurance, Dr. Webb stated that he agreed with the view of the Victorian Branch of the British Medical Association. He had no knowledge of any existing scheme of medical benefits through national insurance which would be applicable to Australia. He had studied the British scheme to some extent. The first point in regard to it was that in Australia there was no class comparable in any way with the lower grade of workers in Great Britain. Many years ago, Sir Henry Campbell Bannermann had said that there were about twelve million people in Great Britain who lived permanently on the verge of destitution. That statement had created a great deal of surprise and some disturbance at that time. It could easily be imagined that the most rudimentary form of social amelioration applied to such a population must at once bring about a striking improvement and that had apparently been the case in Great Britain. But in Australia there was no such class. They started on a very much higher economic plane and, therefore, from such a system as the British scheme no great improvement was to be expected. Similarly, from the point of view of administration, one must take cognizance of the tremendous difference on the destiny of population. There were nearly four hundred people per square mile in Great Britain and

less than two in Australia. That was a circumstance which must weigh heavily in the organization and administration of any scheme of national insurance. Again, under any such scheme, the conditions would almost certainly be extremely unfavourable to the medical men and the scheme would bring about a certain deterioration in the present high standard of contract practice. That was what they were all out to prevent if they could. The medical profession in Australia stood on a very high and equal level. There were no low grade medical practitioners and they were extremely anxious to prevent the possibility of anything such as had occurred in America, where the higher ranks of the profession for years past had been attempting to bring about a general increase in the level of the profession. They admitted that they had failed utterly. Consequently, the higher grades had had to separate themselves entirely from a large bulk of the profession. Again, there was the view that the medical man, the social reformer and the sociologist looked forward very largely to prevention. It was probable that the triumph of medicine in future would be in the direction of prevention. Preventive medicine would be very expensive and they were anxious to prevent any money being spent upon what they thought would be ineffectual, when it was so urgently required for the purpose of prevention. Of course, they must have contract practice of some sort. The ground was covered by the friendly societies, but he would not say that it was covered in the best way or covered very efficiently.

Asked if a system of national insurance were introduced, it would be necessary for the Government to fix a scale of charges, he could not offer any opinion upon that matter in the absence of very definite proposals. He did not think that it was necessary to have a medical taxing officer. The scale obtaining was extremely flexible and every consideration was given to the circumstances of the patient. Probably more consideration was given than would be given by a taxing officer.

Asked if a panel practice were instituted, what would be the maximum number of patients a doctor should have on his list, Dr. Webb replied that the number varied a great deal according to the circumstances. Some doctors organized their practices better than others and there were also the difficulties of travelling round the districts. An average list in a suburban practice would be about one thousand, including everybody. He was asked if, apart from the question of remuneration, he thought that the present friendly society contract system was of very material benefit to the community generally, he said that it was a benefit; it filled a want, but filled it very badly. During the dispute, some of the Branch representatives had placed clearly before the representatives of the friendly societies the importance of modern methods of investigation, such as the establishment of pathological and X-ray laboratories, but he was sorry to say that the representatives had not seemed to comprehend what they wanted. They had no idea what modern medicine meant and were perfectly satisfied with a lodge doctor at £1 *per annum*, with a lodge book and an opportunity to see the doctor when they liked, a cursory examination, the giving of a name to a disease and a prescription. That was the limit of their knowledge. There was no question that modern medicine meant a great reduction in the number of patients a doctor could treat satisfactorily. Even comparatively minor pathological examinations very often required special knowledge. The examination of a sediment under the microscope was very often a matter in which the general practitioner required help. The pathological laboratories were not only required for very abstruse matters, but for ordinary routine examinations. The contract system of friendly societies undoubtedly filled a certain want, but it did not fill it to the full satisfaction of modern medicine.

The British Medical Association felt very strongly that preventive treatment should apply right to the unit of the scheme. They thought that from the preventive point of view, there were a lot of excellent health measures on the statute book, but it was very rare to find them adequately administered. They had never had a chance of being carried out. Therefore, it was necessary first to secure

the proper administration of the measures in existence or to modify them in accordance with modern medicine. Health administration was very far behind the plane of sanitary science. For that reason it was not desirable to see money wasted in other directions. Then, as far as the prevention of disease was concerned, very much more cooperation was required between the health authorities and the medical man in general practice. It was a very important matter and was one which would very promptly yield good results. Of course, prevention really began with the woman in gestation. There were very few institutions which gave anything like proper pre-natal treatment, but amongst the general practitioners known to him there was a good deal of work done. A point was made of exercising continuous supervision over a pregnant woman. As soon as she engaged them for her confinement, certain of his friends exercised a very complete supervision over her. That had a medical effect as well as a psychological effect. Probably it required further standardization, but he had found many instances where a great deal of good had been done by such supervision. Nevertheless, there should be greater public facilities. Of course, there were other methods of preventive treatment, such as child welfare centres and school examinations. The children could be educated to come up for further examinations during their adult life and the work could be carried right through. Those were the directions in which the most benefit would arise. Of course, to be of any value such examinations must be very exact and scientific. They could not be part of an ordinary contract practice, but must involve very detailed and careful examination.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

- BORLAND, WILLIAM McLEAN, M.B., B.S., 1924 (Univ. Melbourne), 32, Kensington Road, South Yarra.
 DELANY, VICTOR RUPERT, M.B., B.S., 1924 (Univ. Melbourne), Alfred Hospital.
 HEALE, TOM ALLISTAIR FALCONER, M.B., B.S., 1924 (Univ. Melbourne), Melbourne Hospital.
 MATHEW, RANDOLPH YULE, M.B., B.S., 1923 (Univ. Melbourne), 69, The Grove, Caulfield.
 OLDFIELD, GEORGE HERBERT, M.B., B.S., 1924 (Univ. Melbourne), Alfred Hospital.
 PARKER, NORMAN JAMES, M.B., B.S., 1924 (Univ. Melbourne), Dunolly.
 SAXTON, WILLIAM JOHN, M.B., B.S., 1924 (Univ. Melbourne), Alfred Hospital.

THE AUSTRALASIAN MEDICAL PUBLISHING COMPANY, LIMITED.

ANNUAL MEETING.

THE Annual Meeting of the The Australasian Medical Publishing Company, Limited, was held in the B.M.A. Building, 30 to 34, Elizabeth Street, Sydney, on July 15, 1924. DR. W. N. ROBERTSON, C.B.E., the Chairman of Directors, in the chair.

Directors' Report.

The Directors' Report for the year as follows was adopted.

The Directors submit their Report for the past year and the Balance Sheet as at June 30, 1924, together with the Profit and Loss Account for the twelve months ended June 30, 1924.

The business of the Company has, for the most part, been concerned with the production of THE MEDICAL JOURNAL OF AUSTRALIA which completed its tenth year on June 30, 1924. It has also been engaged in the publication of the Transactions of the Australasian Medical Congress (British Medical Association), First Session, Melbourne, 1923, which have been appearing for some months as a

series of supplements to the journal. It has also set up and published *The Health Forum*, the quarterly journal of the Public Health Association of Australasia.

It is gratifying to note the hearty support which has been given by the members of the Association to the proposal of the Directors to establish a complete printing plant, which will enable the journal to be wholly produced by the Company's own staff independently of outside printers. The amount required to be subscribed for plant and building and working capital was found to be £15,000; and it was decided to raise this by the issue to members of the Association of 600 debentures (Series B) of £25 each bearing interest at 10% *per annum*. The amount was largely over-subscribed. In allotting the debentures no applicant was excluded and only the larger amounts applied for were cut down. In addition, so far as it was practicable to do so, the distribution was so effected that the ratio of the number of debentures to the number of members of the Association in each State should be the same.

Suitable land has been acquired at Arundel and Seamer Streets, Glebe, Sydney. A building has been designed by Mr. H. V. Vernon (Messrs. Vernon and Mills, Architects, Sydney) and a contract for its construction has been made for the sum of £6,903. It is anticipated that the linotypes and printing presses and other equipment of a printing house will be installed by the end of the year and that the machinery will be in full running order by the middle of January, 1925.

Dr. Gregory Sprott and Dr. the Honourable A. J. H. Saw retire from the Board of Directors in accordance with the requirements of the Articles of Association and are eligible and offer themselves for re-election.

For the financial position of the Company, you are referred to the Balance Sheet and the Profit and Loss Account.

(Signed) W. N. ROBERTSON.

July 15, 1924. Chairman.

Dr. Gregory Sprott and the Honourable A. J. H. Saw were re-elected Directors of the Company.

THE NEW PREMISES OF THE COMPANY.

On July 16, 1924, the Directors and Members of The Australasian Medical Publishing Company, Limited, Drs. W. N. Robertson, Dr. W. Kent Hughes, Professor F. P. Sandes, Dr. H. S. Newland, Dr. Gregory Sprott, Dr. J. Lockhart Gibson and Dr. R. H. Fetherston, the members of the Federal Committee of the British Medical Association in Australia, Sir George Syme, Dr. R. H. Todd, Dr. J. Adam Dick, Dr. Bronte Smeaton and Dr. D. H. E. Lines, Dr. Andrew Davidson, the President of the New South Wales Branch of the British Medical Association, Mr. H. V. Vernon, architect, Mr. Max Cooper, builder, and the Editor and Assistant Editor of THE MEDICAL JOURNAL OF AUSTRALIA gathered together on the building site for the purpose of celebrating the laying of the foundation stone of the new building of the Company.

SIR GEORGE SYME in the course of a few well chosen words drew attention to the importance of the occasion and called upon Dr. W. N. Robertson, the Chairman of Directors, to perform the ceremony of setting the foundation tablet.

DR. W. N. ROBERTSON thereupon unveiled a tablet of Silician marble bearing the following inscription:

THE FOUNDATION STONE OF THIS PRINTING HOUSE
 WAS SET BY

WILLIAM NATHANIEL ROBERTSON, C.B.E., M.B., C.M.,

CHAIRMAN OF DIRECTORS OF

THE AUSTRALASIAN MEDICAL PUBLISHING COMPANY, LIMITED.

JULY 16, 1924.

In the course of his speech he referred to the generous action of the New South Wales and the Victorian Branches of the British Medical Association in giving up their medical journal in the year 1914 to make place for the Federal medical journal. He sketched the events in the history of the Company from that date until the present

time. The new era had been rendered possible by the ready and liberal support of the members of the Association. The sum of £15,000 had been asked for and had been over-subscribed. He spoke in a sanguine tone of the prospects of the Company in the future; when ensonced in its new home it would be able to publish a larger and better journal and also undertake the printing of other scientific material. He then declared the stone "well and truly laid."

PROFESSOR F. P. SANDES entertained those present at luncheon at the University Club.

University Intelligence.

UNIVERSITY OF SYDNEY.

At a meeting of the Senate of the University of Sydney, held on July 7, 1924, the degree of Master of Surgery (Ch.M.) was conferred *in absentia* on Messrs. C. G. H. Blakemore, J. H. Blakemore, J. J. Gearin, H. M. Kennedy and N. D. Royle.

The following report was considered by the Senate.

The growth of the universities in Australia, the rapid increase in their opportunities and needs and the excessive burden thus imposed on their Chancellors and the Chairmen of their Professorial Boards led the conference of Australian universities in 1920 to request the Standing Advisory Committee of that conference to consider the expedience of creating a position analogous to that of Principal in the Scottish universities or of paid Vice-Chancellor in the modern universities of England. The Advisory Committee reported recommending that as the various universities increased in size, this step should be taken and that therefore the new officer should be a member of the chief governing body, President of the Professorial Board, member of all the Faculties and under the Chancellor and his Deputy the administrative head of the university. It was expressly stated, however, that he should not have the autocratic power of an American President, his functions apart from the regular administration being chiefly to guide and coordinate the activities of the staff and to bring the claims and importance of the university before the community.

As the existing arrangements were fairly satisfactory even in Sydney, the largest of the Australian universities, no further action was taken as long as Mr. Barff, the present Warden, remained in active service, but when he notified his impending resignation, the Senate in November, 1923, appointed a committee to consider the position. After several meetings the committee reported, very much on the lines laid down by the Standing Committee of the Australian Universities four years before, that the title of the present Vice-Chancellor should be altered to that of Deputy Chancellor, that in place of the present Warden a chief paid administrative officer should be appointed, who in accordance with the prevalent usage throughout the Empire should be styled Vice-Chancellor; that the new Vice-Chancellor should have a seat in the Senate, be Chairman of the Professorial Board and *ex officio* member of the Faculties, boards and committees, that the position of Registrar should be a separate one and that the Registrar should be an *ex officio* member of the Professorial Board and the Faculties.

This report, after a preliminary discussion by the Senate, was referred to the Professorial Board which after much careful deliberation sent back a lengthy statement to the Senate, endorsing in almost every point the proposals of the Senate Committee except it recommended that the Professorial Board should still elect its own Chairman. In addition it endeavoured to describe the functions of the administrative chief officer in the following paragraphs:

Generally speaking, the demands on the Vice-Chancellor would fall under three different heads, though, in practice, they cannot be dissociated.

(i.) He should devote much time and thought to the requirements of the university, present and future, prepare schemes for its development and

increased influence and efficiency to submit to the Senate and suggest after careful consideration the lines on which its policy should proceed. He should also prepare an annual report for presentation to the Senate, in addition to the statutory report presented each year to Parliament.

(ii.) He should insure continuity and persistence in giving effect to all the principles adopted and decisions arrived at by the Senate. In doing this, he would, in the words of Sir Henry Miers, Vice-Chancellor of the University of Manchester, "serve to blend the administrative with the academic view." Thus, he would keep closely in touch with and act as a link between the Senate, the Senate's Standing Committees (particularly those appointed to deal with finance and with the grounds and buildings) and the Professorial and Proctorial Boards, the Library Committee, the ten Faculties and other university organizations, such as the University Extension Board, the Committee for Tutorial Classes, the Union.

(iii.) He should give great attention to the external interests of the university, to bringing the services and efforts of the university under the notice of the various sections of the community, the Government and the Department of Public Instruction and scientific and other bodies to advocating the claims of the university in the press and by other means that will bring home its importance to the public.

These three schemes, approved by three very different bodies, but in the main closely coinciding, are based on the fact that the university has grown so large and complex as to demand the oversight of an officer who shall devote his whole time, thought and energy to its efficiency and development and a more unified organization than it has hitherto possessed, which may involve a further definition of the chief administrative positions immediately under the Vice-Chancellorship, those of registrar, accountant and student adviser.

A MEETING of the Senate of the University of Sydney was held on July 14, 1924.

Dr. A. N. St. G. H. Burkitt, B.Sc., was appointed to the vacant position of Associate Professor of Anatomy. Dr. Burkitt is at present on leave studying the methods of teaching histology and inquiring into cancer research problems. He will possibly return to Australia via America.

It was decided that the date for the holding of the quinquennial election of Fellows of the Senate by graduates be Monday, November 10, 1924.

On the recommendation of the Faculty of Medicine the following were appointed examiners for the forthcoming examinations:

Doctor of Medicine: Dr. Stawell, University of Melbourne; Professor A. E. Mills and Associate Professor Priestley.

Doctor of Medicine and Master of Surgery: Sir George Syme, University of Melbourne; Professor F. P. Sandes and Dr. C. E. Corlette.

FINAL DEGREE.

Medicine: Professor A. E. Mills, Dr. Cecil Purser and Dr. S. A. Smith.

Clinical Medicine: Dr. J. M. Gill, Dr. S. Gillies, Dr. C. B. Blackburn and Dr. H. J. Ritchie.

Surgery: Professor Sandes, Dr. R. B. Wade and Dr. H. S. Stacy.

Clinical Surgery: Dr. Gordon Craig, Dr. A. J. Aspinall, Dr. G. H. Abbott and Dr. C. E. Corlette.

Obstetrics: Dr. J. C. Windeyer and Dr. S. H. McCulloch.

Gynaecology: Dr. Fourness Barrington and Dr. G. Armstrong.

FIFTH DEGREE.

Medical Jurisprudence: Dr. R. H. Todd.

Public Health and Preventive Medicine: Dr. Harvey Sutton.

FOURTH DEGREE.

Operative Surgery: Professor Sandes, Dr. Poate, Dr. Aspinall and Dr. McKelvey.

Pathology: Professor Welsh and Dr. E. V. Barling.

Materia Medica: Dr. John Macpherson and Dr. Holmes & Court.

The Faculty also recommended that By-laws, Chapter XII., be amended so as to permit graduates who hold the former degree of Master of Surgery (Ch.M.) being admitted as candidates for the degree of Master of Surgery (M.S.) on the same conditions as holders of the degree of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.S.).

The following letter was received by the Chancellor from the Director-General of American College of Surgeons verifying the cable inviting Professor Hunter and Dr. N. D. Royle to visit America in October next:

American College of Surgeons,
40, East Erie Street, Chicago,
May 20, 1924.

The Honourable Sir William Portus Cullen,

K.C.M.G., M.A., LL.D.,
Chancellor, University of Sydney,
Sydney, Australia.

Dear Mr. Chancellor,

In behalf of the Board of Regents of the American College of Surgeons, I have the honour to inform you that the College has extended an invitation to Dr. John Hunter and Dr. N. D. Royle to collaborate in delivering the Doctor John B. Murphy Oration in Surgery at the Presidential Meeting of the Clinical Congress of the American College of Surgeons, which will be held at the Waldorf-Astoria Hotel, New York City, on Monday evening, October 20, 1924.

It is the hope of the Regents that the University of Sydney will be appreciative of the far-reaching benefits that will be derived by having these men present in unison the outstanding work that has been accomplished by them and, therefore, urge that your University will encourage Dr. Hunter to accept our invitation.

The Clinical Congress of the American College of Surgeons is the annual conference which is held by the College and consists of scientific and literary papers concerning or relating to the art and science of surgery and surgical and diagnostic clinics. The audience is made up of about twenty-five hundred of the outstanding surgeons and surgical specialists of Canada, the United States and Latin America. I am taking the liberty of sending to you under separate cover a copy of the 1924 Blue Book of the American College of Surgeons, which will acquaint you with the aims and ideals of the College and also give you a list of the more than seven thousand surgeons who constitute its Fellowship.

The transactions of the Clinical Congress are published in full in the official journal of the College, *Surgery, Gynecology and Obstetrics*, which insures a very broad distribution of the material which is presented at the Congress. The Doctor John B. Murphy Oration in Surgery is one of the outstanding features of our annual Congress and is delivered each year by a distinguished surgeon who is specially invited for this occasion. The first oration was delivered by Sir Berkeley Moynihan, of Leeds, England; the second by Dr. William J. Mayo; the third by Professor Raffaele Bastianelli, of Rome, Italy; and the fourth by Dr. George W. Crile, of Cleveland.

At the time of the visit of Dr. William J. Mayo and myself to Sydney, we discussed informally with Dr. Hunter and Dr. Royle the question of having them deliver the oration jointly. It was our opinion that a complete picture of the work of these men could be best given by asking them to collaborate in the presentation. Already the members of the medical profession and, I may say, the lay public of America are looking forward with great interest to the visit of these two men, due to the discussion of the matter in interviews which were had by Dr. Mayo and myself.

Trusting that the University of Sydney will cooperate by encouraging Dr. Hunter to accept this invitation to become a delegate to our Clinical Congress, I am,

Very truly yours,

(Signed) FRANKLIN H. MARTIN,
Director-General.

A valuable report was received from Mr. H. G. Hynes, B.Sc.Agr., the Walter and Eliza Hall Research Fellow in Agriculture, from California on the investigations carried out by him during his first year tenure of the Fellowship in the subject of plant pathology.

The following resolutions have been arrived at as a result of the several discussions on the question of the appointment of a chief executive paid officer of the University, following upon the resignation of Mr. H. E. Barff as Warden and Registrar which is to take effect from August 31 next:

1. That the title of the present Vice-Chancellor be altered to that of "Deputy Chancellor" and that chief executive officer be appointed to take the place of the Warden and be styled "Vice-Chancellor."

2. That the new Vice-Chancellor should be Chairman of the Professorial Board with a seat on the Senate.

3. That the new Vice-Chancellor should be an *ex officio* member of the Faculties, Faculty Committees and Boards constituted by the By-laws, but not necessarily chairman of such bodies.

4. That the new Vice-Chancellor should exercise a general supervision over the discipline of the University and be Chairman of the Professorial Board.

5. That the position of Registrar should be separated from that of Warden.

6. That unless otherwise specially determined by the Senate at the time of appointment, the new Vice-Chancellor be appointed under conditions of tenure similar to those applicable to the appointment of professors.

7. That in the first instance the position of Vice-Chancellor be offered to someone to be selected by the Senate or by a Committee of the Senate appointed for the specific purpose of considering suitable appointees.

8. That a copy of the above resolutions should be forwarded to the Honourable the Minister for Public Instruction and that the University Solicitor be asked to draft the necessary legislation to enable Parliament to give effect to such changes as are necessary from the adoption of the resolutions.

A committee of the Senate is at present considering the draft bill which has been drawn up by the University Solicitor.

Pending these changes, the Senate has asked Professor MacCallum to undertake the duties of Warden from September 1 until the election of the new Senate which is to take place on Monday, November 10, 1924.

Correspondence.

ANTE-NATAL SUPERVISION.

SIR: In the interesting paper on ante-natal supervision by Dr. F. Brown Craig several inaccuracies appear in regard to the "anterior shoulder" as a means of estimating the descent of the head in vertex cases, as described by me in a paper: "Some Points in Clinical Obstetrics," which was read at the Brisbane Congress in 1920.

I.—Dr. Brown Craig states: "When the head is fixed in the brim, before labour begins, the level of the anterior shoulder is on a horizontal plane ten to twelve and a half centimetres (four to five inches) above the symphysis."

My paper is worded: "Before engagement the anterior shoulder lies 4 to 5 inches above the symphysis."

II.—Dr. Brown Craig states that: "When flexion is completed at the onset of labour the plane of the anterior shoulder is five to seven and a half centimetres (two to three inches) above the symphysis."

My paper reads as follows: "With full engagement of the head the shoulder lies two inches above the symphysis."

The main points in regard to the level of the anterior shoulder before labour or early during labour are: Firstly with a floating head, *id est* a head completely above the brim, the shoulder is four to five inches above the symphysis and secondly, with full engagement of the head in

the brim of the pelvis the shoulder will be two inches above the symphysis, the level of the shoulder thus indicating the amount of engagement of the head.

Yours, etc.,

J. C. WINDEYER.

235, Macquarie Street, Sydney,
July 21, 1924.

PUBIOTOMY.

SIR: I regret that I missed Dr. E. Bettingham-Moore's letter in yours of March 15, 1924, *re* my article on "Pubiectomy," of February 23, 1924, until my attention was called to it recently by a colleague. He asked me to contrast premature labour induced two to four weeks before term, with pubiotomy for difficult labour. The former gives a child with its constitution decidedly less strong for its whole lifetime. It leaves the mother's womb in an unstable condition with tendency to miscarriage, adherent placenta *et cetera*. The latter does not do so. The immediate dangers are not great, about the same in each case. There is often much difficulty in *multipara* in determining the exact weeks of pregnancy. The crux of the matter is that induced labour leave future deliveries just as difficult, whereas pubiotomy removes the difficulty for all time. *Re* functional after effects on locomotion in the mothers in my series, one had pains *et cetera* down the left sciatic for six weeks, otherwise none complained of any trouble in walking *et cetera*.

Yours, etc.,

D. P. O'BRIEN.

Avonleigh, Rockhampton, Queensland,
June 22, 1924.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered, under the provisions of the *Medical Act, 1912 and 1915*, as duly qualified medical practitioners:

- ALLEN, STUART DOUGLAS, M.B., Ch.M., 1924 (Univ. Sydney), Boulevard, Strathfield.
ASHBY, GILBERT WATERS, M.B., Ch.M., 1924 (Univ. Sydney), 421, David Street, Albury.
BANKS, JAMES MATTHEW, M.B., Ch.M., 1924 (Univ. Sydney), Woottona, Bancroft Avenue, Roseville.
BARNET, THOMAS MCKAY, M.B., Ch.M., 1924 (Univ. Sydney), 31, Etham Avenue, Darling Point.
BEYINGTON, WILLIAM MACFARLANE, M.B., Ch.M., 1924 (Univ. Sydney), 11, Mansfield Street, Glebe Point.
BLACKBURN, ALAN JOHN, M.B., Ch.M., 1924 (Univ. Sydney), 9, Wyalong Street, Burwood.
BLAKEMORE, JOHN HOWELL, M.B., 1924 (Univ. Sydney), Wawona, Cooper Street, Strathfield.
BRIGGS, WEBSTER, M.B., Ch.M., 1924 (Univ. Sydney), Duncan Street, South Brisbane.
BYRNE, THOMAS PATRICK, M.B., Ch.M., 1924 (Univ. Sydney), 20, Wemyss Street, Marrickville.
BYRNES, GODFREY JAMES, M.B., Ch.M., 1924 (Univ. Sydney), 26, Hardy Street, Ashfield.
CHAFFER, ARTHUR ERNEST FRASER, M.B., Ch.M., 1924 (Univ. Sydney), 8, Arbutus Street, Mosman.
CLEMENT, EDITH, M.B., Ch.M., 1924 (Univ. Sydney), Shephardstown.
CLOUGH, GEORGE MILLER, M.B., Ch.M., 1924 (Univ. Sydney), Springdale Road, Killara.
COLLINS, JOSEPH FRANCIS, M.B., Ch.M., 1924 (Univ. Sydney), 100, Glover Street, Mosman.
CONNOR, WILLIAM VICTOR, M.B., Ch.M., 1924 (Univ. Sydney), Victoria Road, Woollahra.

- CORIN, KATHLEEN RUTH, M.B., Ch.M., 1924 (Univ. Sydney), Rosemoran, Wahroonga.
DELANEY, JAMES JOSEPH PATRICK, M.B., Ch.M., 1924 (Univ. Sydney), Kentucky Street, Armidale.
DENNEEN, MAYNARD SCOT, M.B., Ch.M., 1924 (Univ. Sydney), Fisher Avenue, Rose Bay.
DIAMOND, LOUIS BERNARD, M.B., Ch.M., 1924 (Univ. Sydney), Bondi Road, Bondi.
DIXON, PHILLIP VERNON, M.B., Ch.M., 1924 (Univ. Sydney), Warrangi Street, Turramurra.
DONALDSON, WILLIAM SCOTT, M.B., Ch.M., 1924 (Univ. Sydney), Lane Cove Road, Gordon.
DOWNWARD, CHARLES ANTHONY, M.B., 1924 (Univ. Sydney), Loudon Avenue, Haberfield.
DUGGAN, ARCHIBALD ROXBURGH HUNT, M.B., Ch.M., 1924 (Univ. Sydney), Garfield Street, Wentworthville.
EDWARDS, COLIN MUNRO, M.B., Ch.M., 1924 (Univ. Sydney), Victoria Street, Ashfield.
ELLERKER, MARJORIE ETHEL, M.B., 1924 (Univ. Sydney), Belmont Road, Mosman.
FINLAYSON, NORMAN BAIN, M.B., Ch.M., 1924 (Univ. Sydney), Smith Street, Wollongong.
FIRTH, WILLIAM BALFOUR, M.B., Ch.M., 1924 (Univ. Sydney), 20, Queen Street, Mosman.
FLORANCE, FREDERICK CLAUDE, M.B., 1924 (Univ. Sydney), Glebe Road, Glebe Point.
FLYNN, JOHN JOSEPH WITTON, M.B., Ch.M., 1924 (Univ. Sydney), Martin Road, Centennial Park.
FLYNN, LEOPOLD RUPERT, M.B., Ch.M., 1924 (Univ. Sydney), Martin Road, Centennial Park.
FOX, MARION GALBRAITH, M.B., Ch.M., 1924 (Univ. Sydney), Lynwood Avenue, Killara.
GOLDMAN, JOSEPH, M.B., Ch.M., 1924 (Univ. Sydney), Maroubra Bay Road, Maroubra.
GRAHAM, ALEXANDER WILLIAM, M.B., Ch.M., 1924 (Univ. Sydney), Gowrie Avenue, Waverley.
GRAY, ALEXANDER WILLIAM WHEATLEY, M.B., Ch.M., 1924 (Univ. Sydney), Albert Road, Strathfield.
GRIBBEN, JOHN, M.B., Ch.M., 1924 (Univ. Sydney), Tryon Road, Lindfield.
HALL, GEORGE BRUCE, M.B., Ch.M., 1924 (Univ. Sydney), Cranbrook Road, Rose Bay.
HALL, THOMAS MERVYN SEYDE, M.B., 1924 (Univ. Sydney), 22, Court Road, Double Bay.
HAMILTON, JOHN BRUCE, M.B., Ch.M., 1924 (Univ. Sydney), Hampton Court, Darlinghurst.
HARLOCK, LACHLAN ALEXANDER, M.B., Ch.M., 1924 (Univ. Sydney), 17, Salisbury Road, Kensington.
HEWITT, THOMAS GEORGE, M.B., Ch.M., 1924 (Univ. Sydney), University Club, Sydney.
HILL, HARRY ROLAND, M.B., Ch.M., 1924 (Univ. Sydney), 8, Cliff Street, Manly.
HUDSON, KENNETH ALFRED KNIGHT, M.B., Ch.M., 1924 (Univ. Sydney), Ocean Road, Manly.
HYNDES, PAUL FRANCIS, M.B., Ch.M., 1924 (Univ. Sydney), 428, Marrickville Road, Marrickville.
JOBINS, LESLIE THOMAS, M.B., Ch.M., 1924 (Univ. Sydney), Marrar.
JONES, FRANK MOULTON CLIFFORD, M.B., Ch.M., 1924 (Univ. Sydney), Wolseley Road, Mosman.
KELLY, GERALD GEORGE, M.B., Ch.M., 1924 (Univ. Sydney), Clarendon Road, Stanmore.
KEYS, RAYMOND ALLISON, M.B., Ch.M., 1924 (Univ. Sydney), 29, Hill Street, Carlton.
KILGOUR, KEITH ALEXANDER MACAULEY, M.B., Ch.M., 1924 (Univ. Sydney), 38, Alt Street, Ashfield.
KRISTENSON, RONALD JUSTICE CARLISLE, M.B., Ch.M., 1924 (Univ. Sydney), 9, Constitution Road, Dulwich Hill.
LAHZ, RUDOLPH SERGIUS, M.B., Ch.M., 1924 (Univ. Sydney), 32, Manning Road, Double Bay.
LAW, THOMAS BOYD, M.B., Ch.M., 1924 (Univ. Sydney), Ullathorne Road, Drummoyne.
LEWIS, ARTHUR RAYMOND, M.B., Ch.M., 1924 (Univ. Sydney), David Street, Croydon.
MACCALLUM, WALTER PATON, M.B., Ch.M., 1924 (Univ. Sydney), Wyuna Road, Edgecliffe.
MCCULLOCH, JAMES FISHBOURNE, M.B., Ch.M., 1924 (Univ. Sydney), 50, Service Avenue, Canterbury.

MACMAHON, LUCY GERTRUDE, M.B., Ch.M., 1924 (Univ. Sydney), 25, Arcadia Road, Glebe Point.
 MADDOX, JOHN KEMPSON, M.B., Ch.M., 1924 (Univ. Sydney), 385, Mowbray Road, W. Chatswood.
 MAIN, ARTHUR WAREHAM, M.B., Ch.M., 1924 (Univ. Sydney), Longueville Road, Lane Cove.
 MAIN, JAMES NORMAN, M.B., Ch.M., 1924 (Univ. Sydney), East College, Coronation Avenue, Eastwood.
 MALCOLM, ROBERT JAMES WHERRY, M.B., Ch.M., 1924 (Univ. Sydney), Dumaresq Island, Manning River.
 MILLER, IAN DOUGLAS, M.B., 1924 (Univ. Sydney), 3, Burroway Street, Neutral Bay.
 MISKLE, CLARENCE PATRICK, M.B., Ch.M., 1924 (Univ. Sydney), Sunny Hill, Lue.
 MOORE, BROOKE, M.B., Ch.M., 1924 (Univ. Sydney), Merremburn Avenue, Naremburn.
 MORGAN, ANDREW DISTIN, M.B., Ch.M., 1924 (Univ. Sydney), The Rectory, Bowral.
 MUNRO, FRANK VIVIAN, M.B., Ch.M., 1924 (Univ. Sydney), Nelson Bay Road, Waverley.
 NOAD, KENNETH BEESON, M.B., Ch.M., 1924 (Univ. Sydney), Grassmere Road, Neutral Bay.
 NOLAN, GEOFFREY RUSSELL, M.B., Ch.M., 1924 (Univ. Sydney), Belmont Avenue, Wollstonecraft.
 O'DONNELL, JAMES MICHAEL ANTONY, M.B., Ch.M., 1924 (Univ. Sydney), 369, Marrickville Road, Marrickville.
 OWEN, HYAM MAURICE, M.B., Ch.M., 1924 (Univ. Sydney), Cambridge Street, Stanmore.

Medical Appointments.

THE following appointment has been gazetted: DR. WILLIAM GEORGE ARMSTRONG (B.M.A.) to be a member of the Advisory Committee for the Purposes of the *Pure Food Act*, 1908, of New South Wales, as from July 4, 1924, in accordance with the provisions of the said Act, to fill the vacancy caused by the succession of Dr. Robert Dick to the Presidency of the Committee in virtue of his appointment as President of the Board of Health.

THE undermentioned have been re-appointed as Members of the Medical Board of South Australia: DR. A. A. LENDON (B.M.A.), DR. B. H. MORRIS (B.M.A.), DR. R. S. ROGERS (B.M.A.), DR. W. A. VERCO (B.M.A.), and DR. W. T. HAYWARD (B.M.A.).

DR. D. R. W. COWAN (B.M.A.) has been appointed Honorary Physician at the Adelaide Hospital.

THE undermentioned have been appointed Members of the Nurses' Board of South Australia: DR. B. H. MORRIS (B.M.A.), as Chairman; DR. F. S. STEELE (B.M.A.) and DR. R. J. VERCO (B.M.A.).

DR. H. HUFF JOHNSTON (B.M.A.) has been appointed Honorary Assistant Ear, Nose and Throat Surgeon to the Royal Alexandra Hospital for Children, Camperdown, New South Wales.

DR. J. B. HOGG (B.M.A.) has been appointed Government Medical Officer at Esk, Queensland.

THE following appointments in the Department of Mental Hospitals of New South Wales have been gazetted: DR. A. E. EDWARDS (B.M.A.), DR. A. L. KINNA (B.M.A.) and DR. S. J. MINOGUE (B.M.A.), as Medical Officers.

Medical Appointments Vacant, etc..

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

ADELAIDE CHILDREN'S HOSPITAL: Acting Honorary Physician and Acting Honorary Surgeon to Out-Patients.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B. M. A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

JULY 31.—South Australian Branch, B.M.A.: Branch.
 AUG. 1.—Queensland Branch, B.M.A.: Branch.
 AUG. 6.—Victorian Branch, B.M.A.: Branch.
 AUG. 8.—Queensland Branch, B.M.A.: Council.
 AUG. 8.—South Australian Branch, B.M.A.: Council.
 AUG. 12.—New South Wales Branch, B.M.A.: Ethics Committee.
 AUG. 13.—Tasmanian Branch, B.M.A.: Branch.
 AUG. 13.—Melbourne Paediatric Society.
 AUG. 13.—Central Northern Medical Association, New South Wales.
 AUG. 14.—New South Wales Branch, B.M.A.: Clinical Meeting.
 AUG. 14.—Victorian Branch, B.M.A.: Council.
 AUG. 14.—Brisbane Hospital for Sick Children: Clinical Meeting.
 AUG. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee; Organization and Science Committee.
 AUG. 20.—Western Australian Branch, B.M.A.: Council.
 AUG. 22.—Queensland Branch, B.M.A.: Council.
 AUG. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
 AUG. 27.—Victorian Branch, B.M.A.: Council.
 AUG. 28.—New South Wales Branch, B.M.A.: Branch.
 AUG. 28.—South Australian Branch, B.M.A.: Branch.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

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